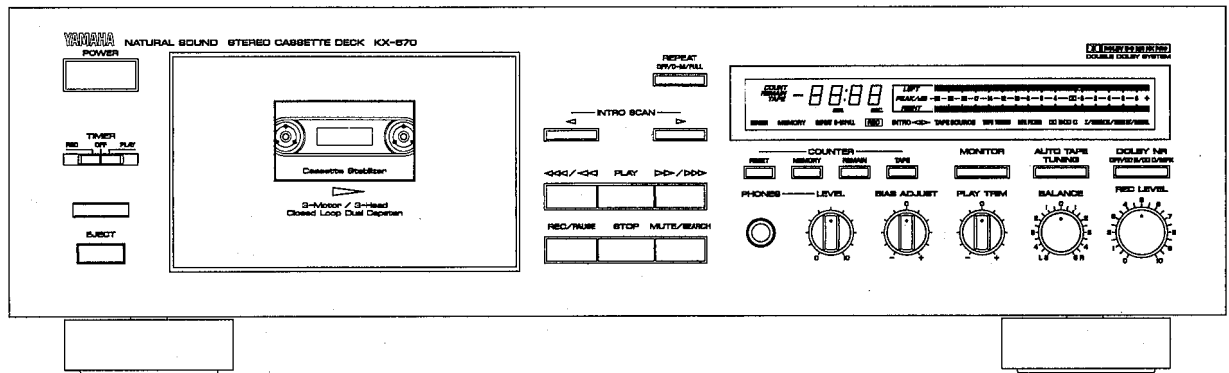


STEREO CASSETTE DECK KX-670

SERVICE MANUAL



IMPORTANT NOTICE

This manual has been provided for the use of authorized YAMAHA Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically YAMAHA Products, are already known and understood by the users, and have therefore not been restated.

WARNING: Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all YAMAHA product owners that all service required should be performed by an authorized YAMAHA Retailer or the appointed service representative.

IMPORTANT: The presentation or sale of this manual to any individual or firm does not constitute authorization, certification or recognition of any applicable technical capabilities, or establish a principle-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research, engineering, and service departments of YAMAHA are continually striving to improve YAMAHA products. Modifications are, therefore, inevitable and specifications are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING: Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

IMPORTANT: Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

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KX-670

100439

YAMAHA

YAMAHA CORPORATION
P.O. Box 1, Hamamatsu, Japan

2.9K-033 ☐ Ⓢ Printed in Japan '92.12.

■ TO SERVICE PERSONNEL

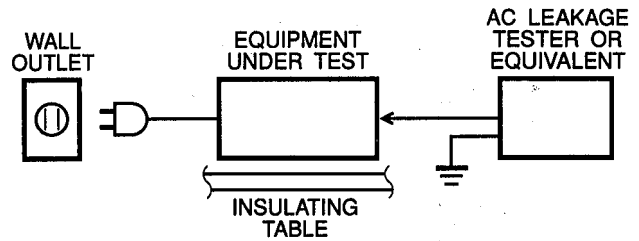
1. Critical Components Information.

Components having special characteristics are marked and must be replaced with parts having specifications equal to those originally installed.

2. Leakage Current Measurement (For 120V Models Only).

When service has been completed, it is imperative to verify that all exposed conductive surfaces are properly insulated from supply circuits.

- Meter impedance should be equivalent to 1500 ohm shunted by 0.15 μ F.
- Leakage current must not exceed 0.5mA.
- Be sure to test for leakage with the AC plug in both polarities.



Dolby noise reduction and HX PRO headroom extension manufactured under license from Dolby Laboratories Licensing Corporation.
HX PRO originated by Bang and Olufsen. "DOLBY", the double-D symbol and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

WARNING: CHEMICAL CONTENT NOTICE!

The solder used in the production of this product contains LEAD. In addition, other electrical/electronic and/or plastic (where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects or other reproductive harm.

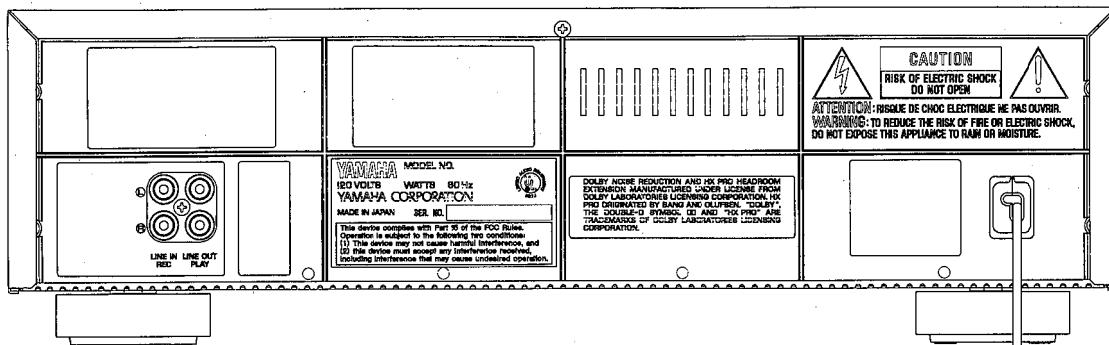
DO NOT PLACE SOLDER, ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHATSOEVER!

Avoid prolonged, unprotected contact between solder and your skin! When soldering, do not inhale solder fumes or expose eyes to solder/flux vapor!

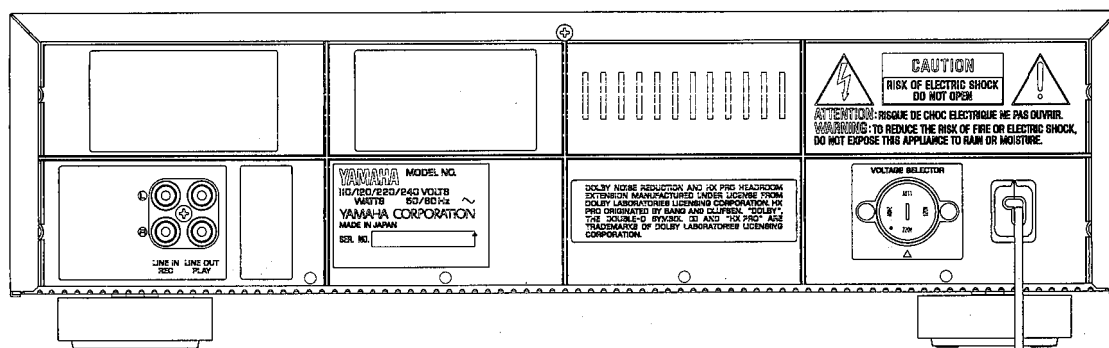
If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

REAR PANELS

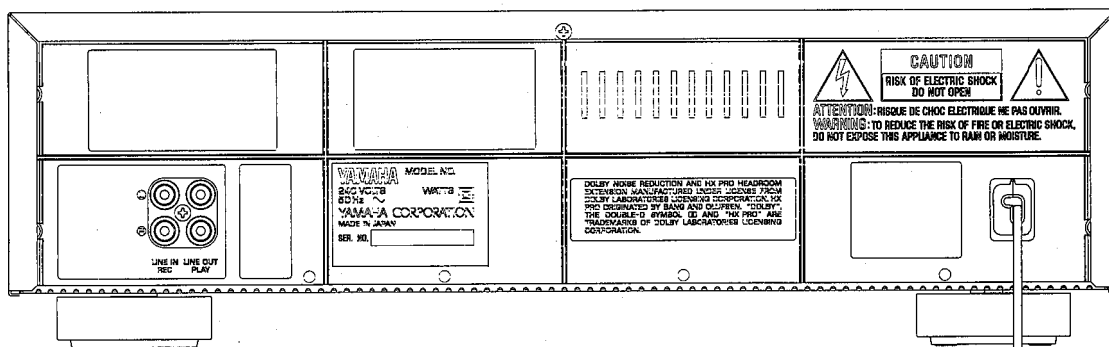
U. S. A. & Canadian models



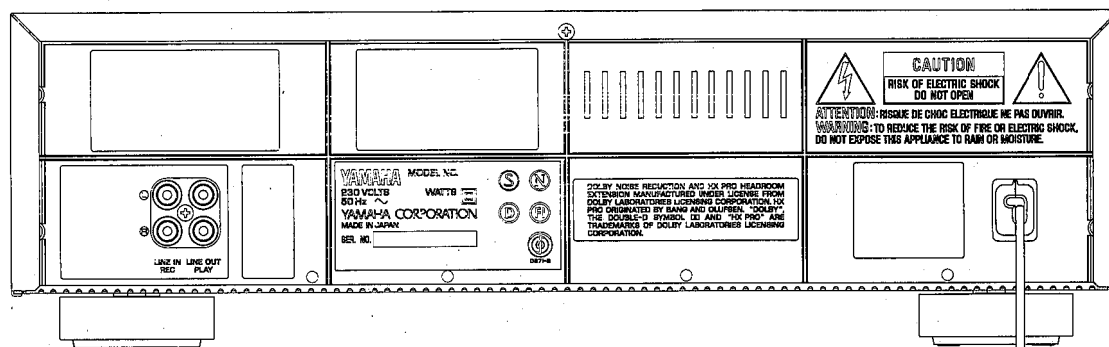
General model



Australian & British models



European model



KX-670

■ SPECIFICATIONS

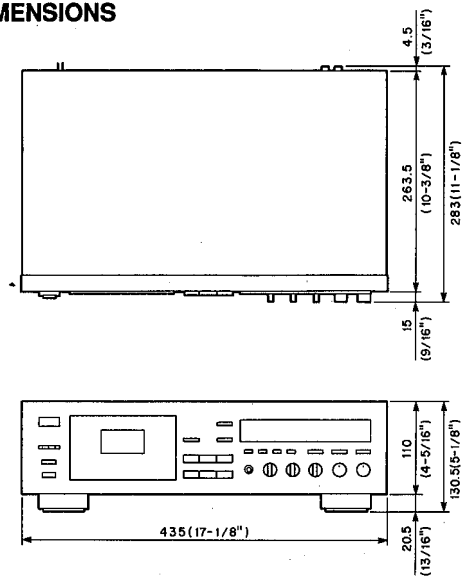
Type	4-Track 2-Channel recording and playback stereo Cassette Deck	
Heads	REC/PB	GF Head (Hard permalloy)
	Erase	Double Gap Ferrite
Motors	Capstan	DC servo motor x 1
	Reel	DC motor x 1
	Assist	DC motor x 1
Wow & Flutter	W.PEAK	±0.07%
	W.RMS	0.04%
Fast Winding Time	about 65 seconds (C-60 tape)	
Frequency Response (-20dB)	Type I/Normal tape	20-18000Hz±3dB
	Type II/High (CrO ₂) tape	20-19000Hz±3dB
	Type IV/Metal tape	20-21000Hz±3dB
S/N Ratio	NR off	60dB
	Dolby B NR on	68dB
	Dolby C NR on	76dB
Harmonic Distortion	Less than 0.8%	
Channel Separation (1kHz)	More than 50dB	
Crosstalk (125Hz)	More than 55dB	
Input Sensitivity/ Impedance (0dB)	Line	100mV/50kΩ
Output Level (0dB)	Line	570mV/2kΩ
	Headphones	1.5mW/8Ω
Power Supplies	U.S.A. and Canadian models	AC120V, 60Hz
	European model	AC230V, 50Hz
	Australian & British models	AC240V, 50Hz
	General model	AC110, 120, 220, 240V, 50/60Hz

Power Consumption	16W
Dimensions (W x H x D)	435 x 130.5 x 283 mm (17-1/8" x 5-1/8" x 11-1/8")
Weight	5.2kg (11 lbs 7 oz)
Accessories	Input, output cords (RCA type)

*Specifications are subject to change without notice.

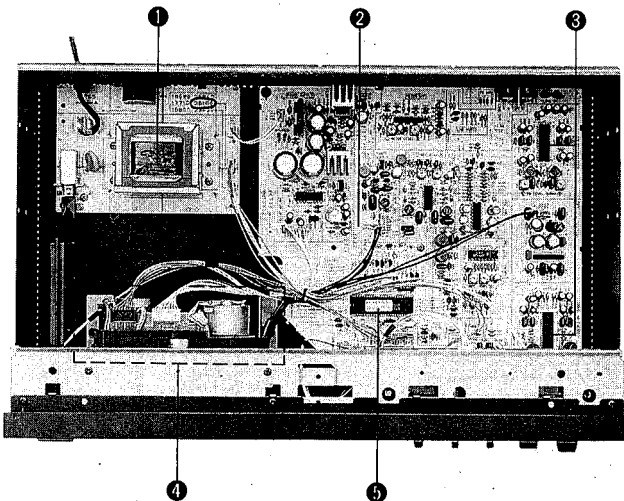
- U U. S. A. model
- C Canadian model
- A Australian model
- G European model
- B British model
- R General model

● DIMENSIONS



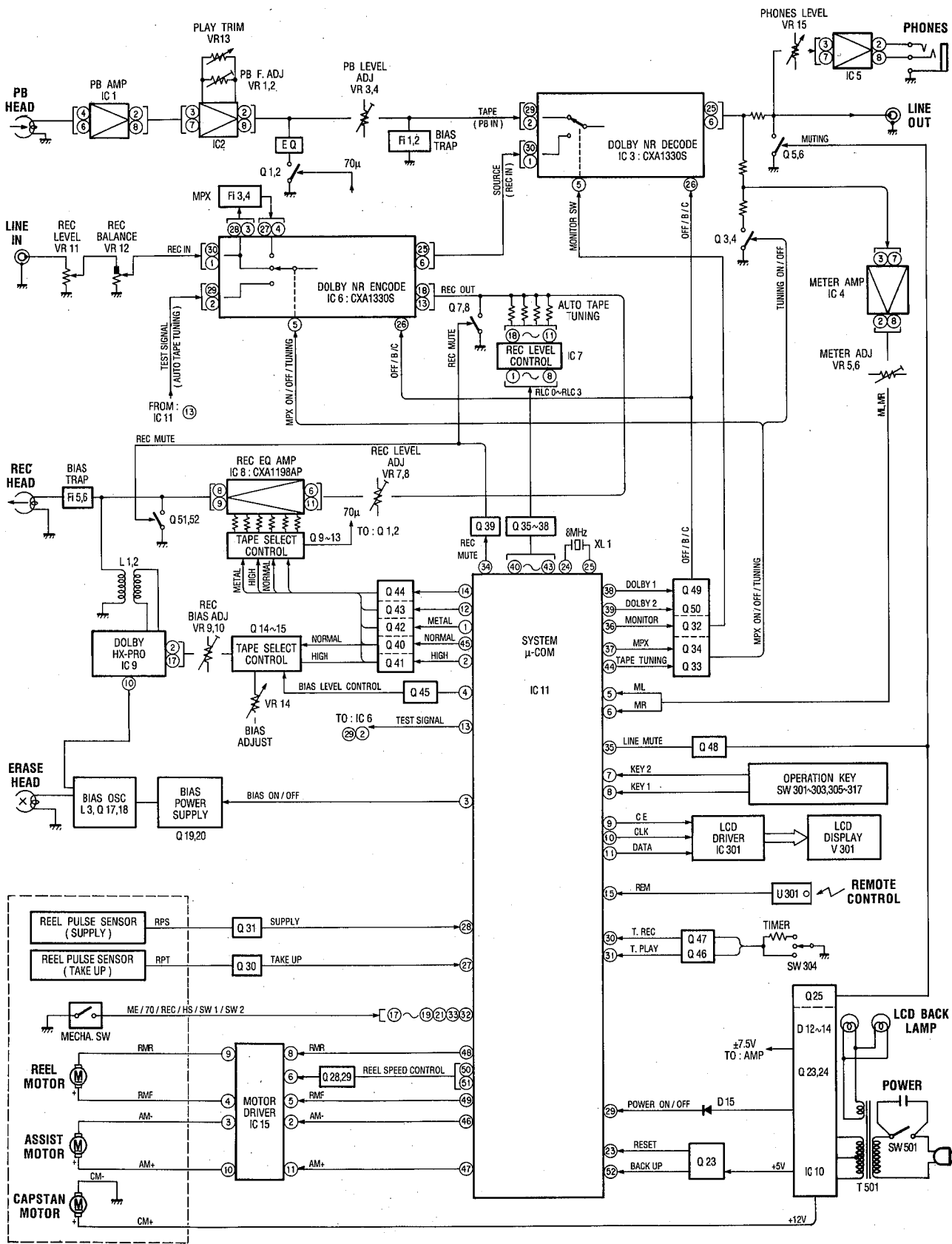
Unit : mm (Inch)

■ INTERNAL VIEW



- ① TRANS P.C.B. ASS'Y
- ② MAIN P.C.B. ASS'Y (1)
- ③ DOLBY IC (IC3, 6) : CXA1330S
- ④ CASSETTE MECHANISM UNIT
- ⑤ μ-COM IC (IC11)

BLOCK DIAGRAM



KX-670

DISASSEMBLY PROCEDURES

(Remove parts in disassembly order as numbered.)

1. Removal of Top Cover

Remove 6 screws (①) in Fig. 1.

2. Removal of Front Panel

- Remove the Extension Bar in Fig.1.
- Remove 5 knobs.
- Remove the Lid Panel.
- Remove 6 screws (②) in Fig.1.

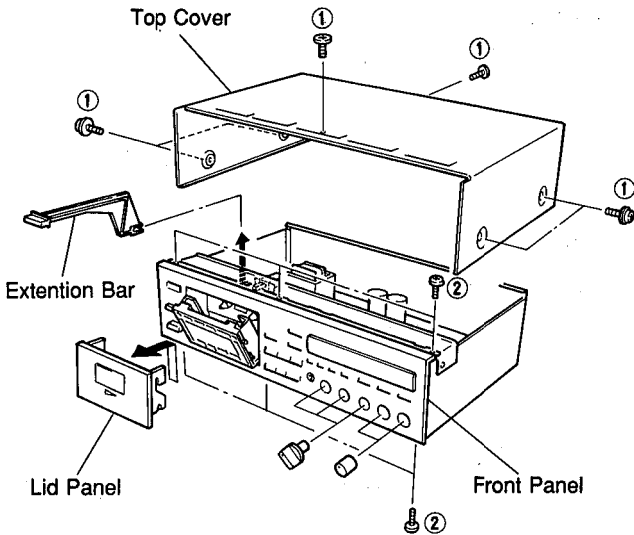


Fig. 1

4. Removal of Housing Ass'y

- Detach the spring in Fig. 3.
- Remove 1 screw (⑥) and then remove the Damper Ass'y in Fig. 3.
- Remove lower part of the Housing Ass'y by pressing it to outside.
- Remove the Housing Ass'y from the damper arm.

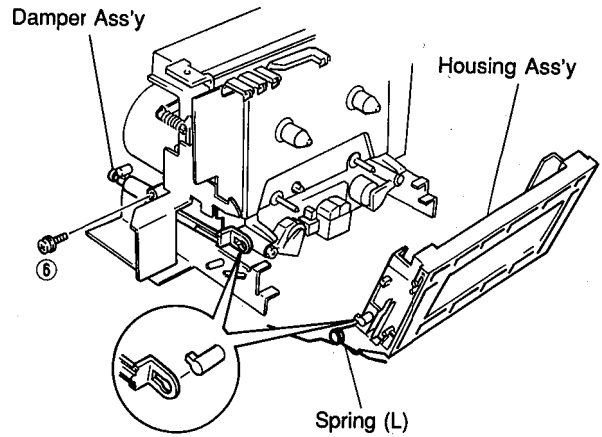


Fig. 3

3. Removal of Cassette Mechanism Unit

- Remove 2 screws (③) and 2 plastic rivets (④) in Fig. 2 and then remove the Top Frame.
- Remove 2 screws (⑤) in Fig. 2 and then pull off the Cassette Mechanism Unit to the back side gently.
- Remove connectors at the Mechanism side. (4 places)

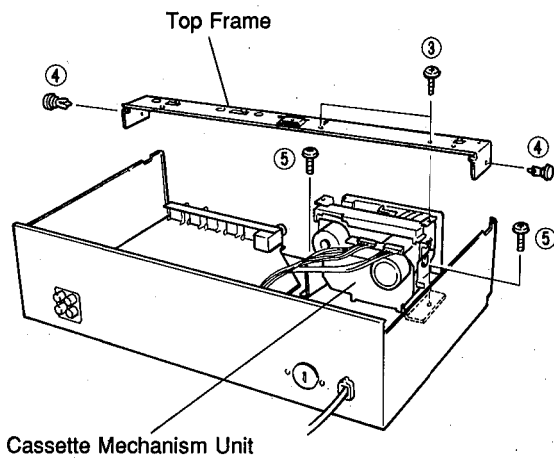


Fig. 2

5. Removal of Pinch Roller

Remove 1 nut (⑦) and 1 washer (⑧) in Fig. 4 and remove the Pinch Roller.

6. Removal of Head Unit

Remove 2 screws (⑨) in Fig. 4 and then remove the Head Unit.

* Perform the adjustment of azimuth after attaching the Head Unit.

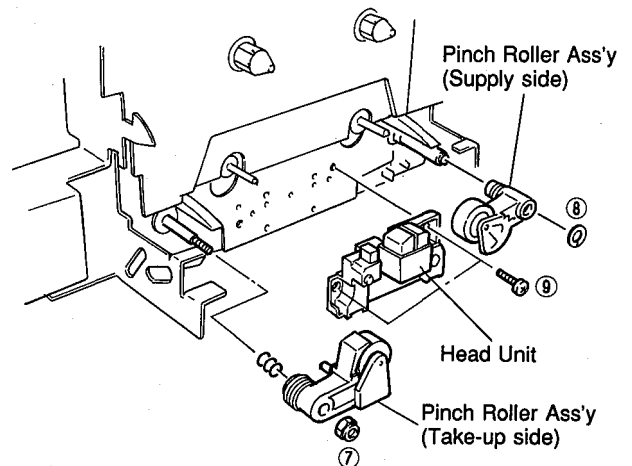


Fig. 4

7. Removal of Capstan & Assist Motors

- a. Remove the solder fixing wires of Capstan and Assist motors.
- b. Remove 4 screws (10) in Fig. 5 and then remove the Back Plate.

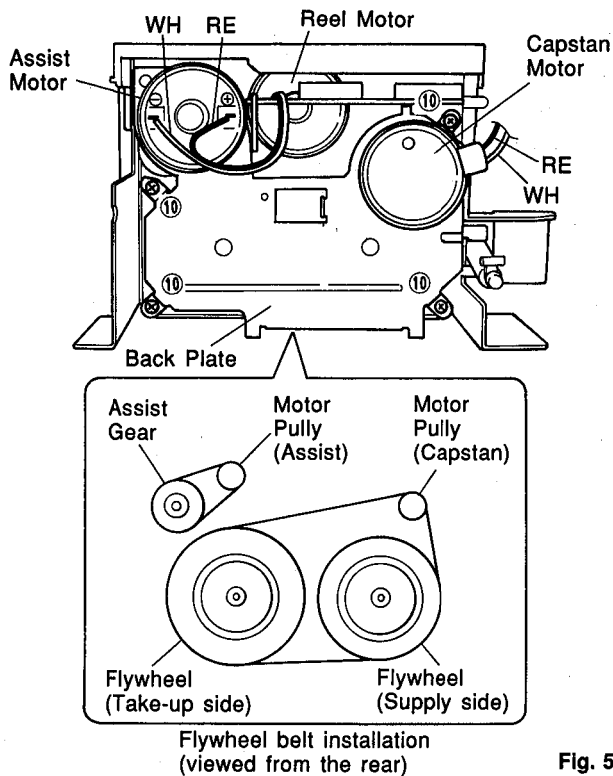


Fig. 5

8. Removal of Reel Motor

- a. Remove 1 screw (13) and 1 plastic rivet (14) in Fig. 7.
- b. Remove the Back Plate.
* When reinstalling it, be sure to fit its lower ends to the positioning hooks in Fig. 7.
- c. Detach the spring (Eject Arm) in Fig.7.
- d. Remove 2 special screws (15) and then remove the Eject Arm in Fig.7.
- e. Remove the solder fixing wires of Reel Motor.
- f. Pull off 1 hooks and then remove the Control P.C.B. Ass'y in Fig.7a.
- g. Remove 2 screws (16) and then remove the Reel Motor in Fig.7.

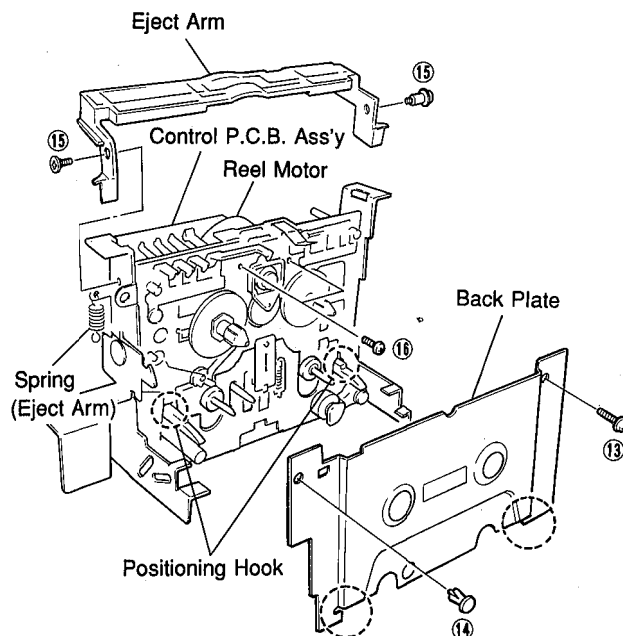


Fig. 7

- c. Remove 3 screws (11) in Fig. 6 and then remove the Capstan Motor.
- d. Remove 2 screws (12) in Fig. 6 and then remove the Assist Motor.

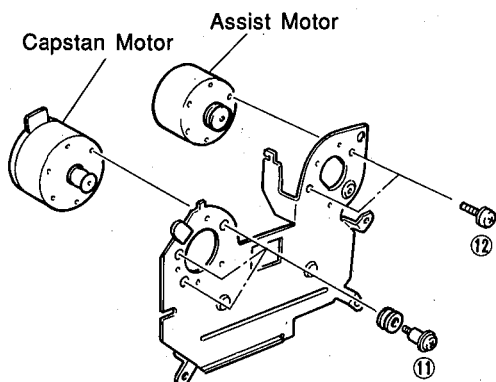


Fig. 6

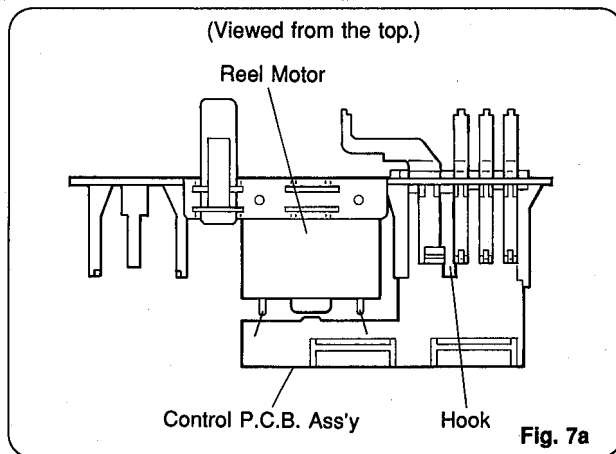


Fig. 7a

■ ADJUSTMENTS

1. Before adjustment :

- Make sure that AC line voltage comes within

Models	AC line voltage
U, C	120V ± 10%
G	230V ± 10%
A, B	240V ± 10%

- Since head magnetization, dust accumulations, etc. are likely to introduce error in the various characteristics, it is very important that the heads are properly demagnetized and cleaned.
- Make adjustments of mechanical system, playback system and recording system in that order.
- Test Conditions
 - PLAY TRIM → Center
 - REC LEVEL → Max
 - REC BALANCE → Center
 - BIAS ADJUST → Center
 - DOLBY NR → OFF

2. Instruments required

- Audio frequency oscillator
- ACVM or dual channel (ACVM)
- Wow/flutter meter
- Oscilloscope
- Frequency counter
- Torque meter
 - TW-2111A (TX911580) Take up/back tension (FWD)
 - CT-160L(TX911120)..... FF/REW
- DCVM

3. Test tape required

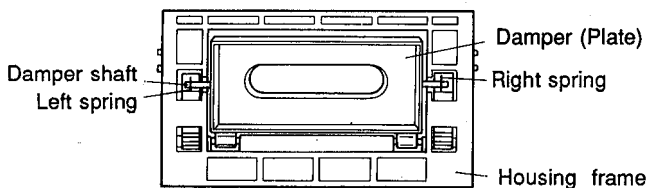
- MTT-111N (TX911650) Normal speed
- MTT-114N (TX911680) Azimuth
- MTT-212N (TX911660) Playback level
- MTT-256 (TX911300) Playback frequency response (Normal)
- MTT-356 (TX911310) Playback frequency response (CrO₂)
- Reference tape
 - Normal (LH) : TDK AC224 (TX912190)
 - High (CrO₂) : TDK AC513 (TX911750)
 - METAL : TDK AC712 (TX911590)

“MECHANICAL ADJUSTMENT”

NOTE: The damper must be removed before you perform steps 1 and 2 of the procedure, because the torque meter is hidden behind the damper (Fig.a).

*How to remove the damper from the housing ass'y.

- Step1. Pinch strongly the points A and B indicated in Fig.b with fingers, and the damper can be removed from the shaft.
- Step2. Remove the leftside spring (shown in Fig.b) from the shaft, moving it toward the left direction with a screw driver or a tweezer (leaving the rightside spring as it is).
- Step3. Take out the damper, pulling it toward you.
- Step4. To put the damper in the original position, reverse steps 1 to 3.



The lid panel is removed

Fig.a

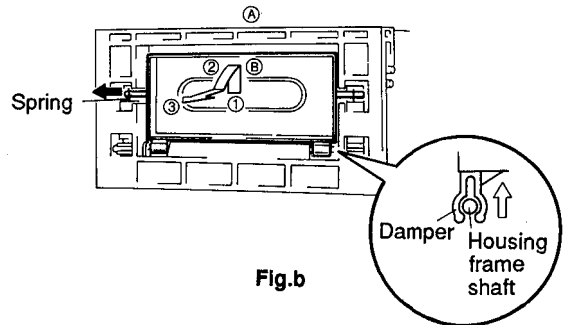
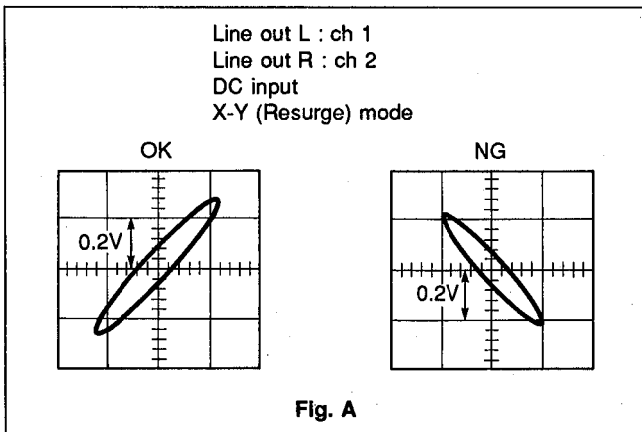
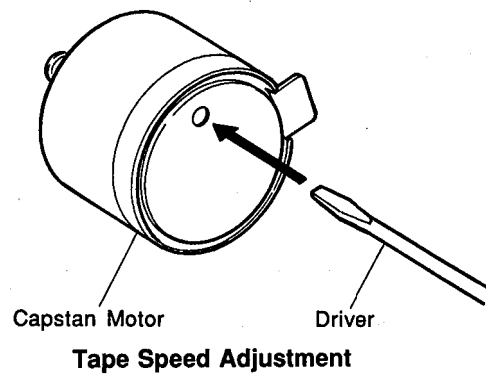
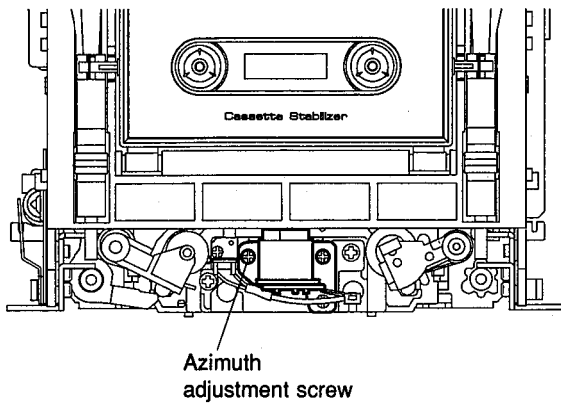


Fig.b

Step	Item to be Adjusted	Tape	Instrument required	Mode	Adjustment part	Rating	Remarks
1	Check each torque	CT-160L (FF, REW)	Torque meter	FF REW		FF, REW torque : more than 70g/cm.	
		TW-2111A (FWD)		PLAY		Take up torque : 30~70g/cm.	
						Back tension : 6~12g/cm.	
2	Check FF, REW take up time	AC-513 (C-60)		FF REW		75 to 105 seconds.	
3	Azimuth	MTT-114N 10kHz, -10dB	ACVM Oscilloscope	PLAY	Azimuth adjustment screw.	Playback output of L and R is maximum and phase difference should be minimum. (Fig. A)	After the adjustment make sure to apply screw lock paint.

Step	Item to be Adjusted	Tape	Instrument required	Mode	Adjustment part	Rating	Remarks
4	Tape Speed	MTT-111N 3kHz, -10dB	Frequency counter	PLAY	Preset potentiometer at the back of the Capstan motor	3000Hz $\begin{matrix} +15 \\ -5 \end{matrix}$ Hz	
5	Wow/Flutter	MTT-111N 3kHz, -10dB	Wow/flutter meter	PLAY		Less than 0.08% (WRMS)	Perform adjustment at the center of the test tape length if possible.



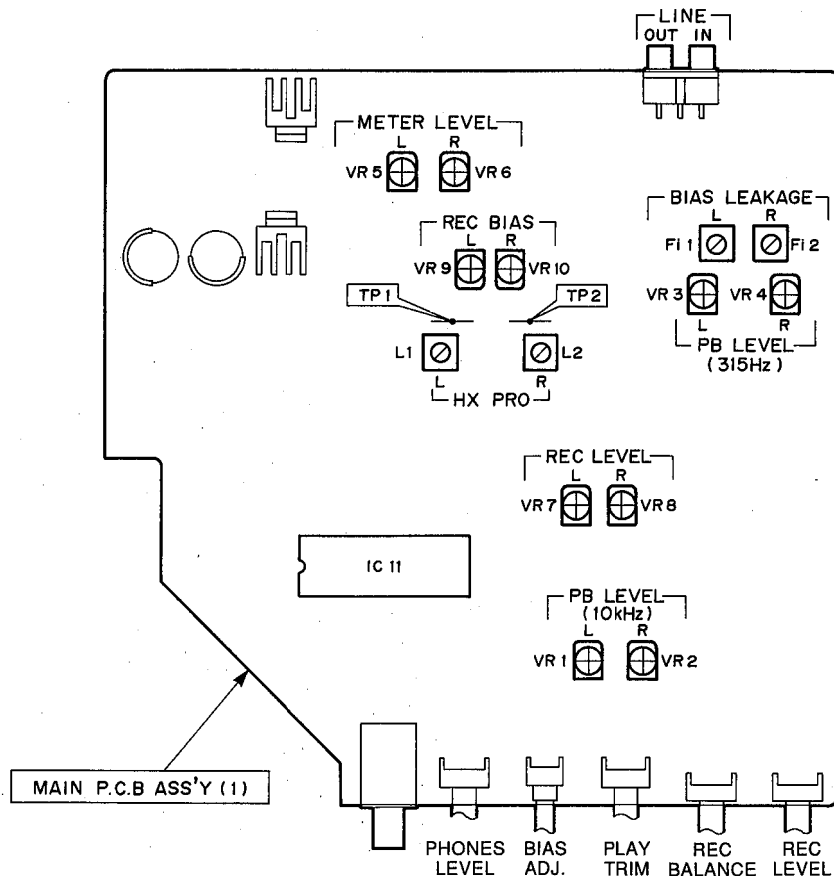
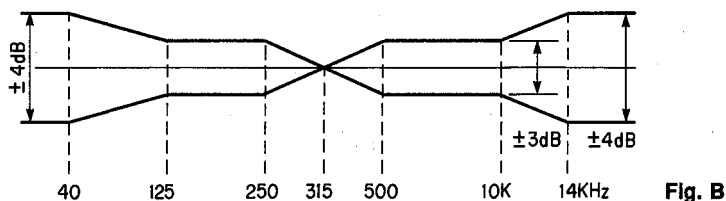
"ELECTRICAL ADJUSTMENT"

- Use 560mV (250nwb/m) for 0dB as the standard level of the unit.
0dB = 250nwb/m (315Hz) = -5dBV (Line out level)

< Playback section >

Step	Item to be Adjusted	Tape	Instrument required	Mode	Measurement conditions	Points of measurement	Adjustment parts	Rating
1	Playback level (315Hz)	MTT-212N 315Hz, 250nwb/m	ACVM	PLAY		LINE OUT	VR3 (L ch) VR4 (R ch)	-5dBV ±1.5dBV
2	Playback level (10kHz)	MTT-114N 10kHz, -10dB	ACVM	PLAY		LINE OUT	VR1 (L ch) VR2 (R ch)	-15dBV
3	Confirmation of playback frequency response	Test tape for frequency check. 3180µs+120µs (LH) (MTT-256) 3180µs+70µs (CrO2) (MTT-356)	ACVM Oscilloscope	PLAY		LINE OUT		Check that the 10kHz playback level is within 0 ± 3dB of the 315Hz playback level. (Fig. B)

● PLAYBACK FREQUENCY RESPONSE



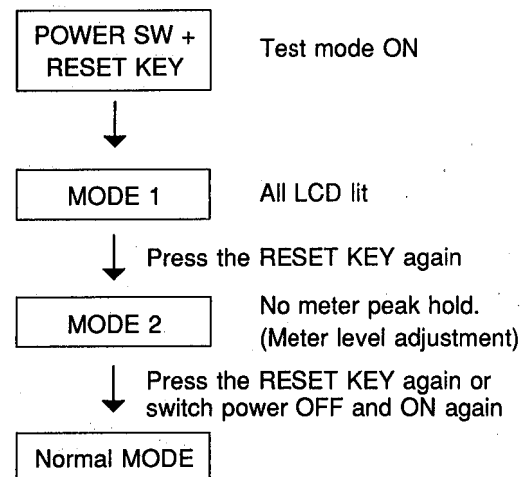
KX-670

< Recording section >

Step	Item to be Adjusted	Tape	Instrument required	Mode	Measurement conditions	Points of measurement	Adjustment parts	Rating
1	Meter Level	AC-513 High (CrO ₂)	ACVM Audio frequency oscillator	REC / PAUSE	1. Set REC LEVEL to maximum. 2. Input 315Hz Signal to LINE IN TERMINAL from Audio Frequency Oscillator. Adjust output level of Audio Frequency Oscillator so that the voltage of LINE OUT TERMINAL becomes -5dBV.	Peak level meter	VR5 (L ch) VR6 (R ch)	Set the Peak hold OFF (Note1) Adjust VR5 and VR6 to the lowest level where the 0dB display part of the level meter lights up.
2	HX PRO	AC-513 High (CrO ₂)	DCVM	REC		TP1 (L) ~ G TP2 (R) ~ G	L1 (L ch) L2 (R ch)	Adjust L1 and L2 so that the DC voltage is minimized at TP1 (Lch) and TP2 (Rch).
3	Bias Leakage	AC-712 METAL	ACVM	REC MONITOR ON	1. Set BIAS ADJUST to maximum. (With no signal applied)	LINE OUT	Fi 1 (L ch) Fi 2 (R ch)	Line out level is minimized. (Less than -40dBV)
4	Recording level	AC-513 High (CrO ₂)	ACVM Audio frequency oscillator	REC MONITOR ON	1. Set REC LEVEL to maximum. 2. Set BIAS ADJUST to center. 3. Input 315Hz Signal to LINE IN TERMINAL from Audio Frequency Oscillator. Adjust output level of Audio Frequency Oscillator so that the voltage of LINE OUT TERMINAL becomes -25dBV.	LINE OUT	VR7 (L ch) VR8 (R ch)	Adjust for equal level of the record and playback levels. (-25dBV)
5	Recording bias (Total frequency response)	AC-513 High (CrO ₂)	ACVM Audio frequency oscillator	REC MONITOR ON	1. Set REC LEVEL to maximum. 2. Set BIAS ADJUST to center. 3. Input 10kHz Signal to LINE IN TERMINAL from Audio Frequency Oscillator. Adjust output level of Audio Frequency Oscillator so that the voltage of LINE OUT TERMINAL becomes -25dBV.	LINE OUT	VR9 (L ch) VR10 (R ch)	Adjust for equal level of the record and playback levels. (-25dBV)
		AC-224 Normal (LH) AC-712 METAL						Adjust for equal level of the record and playback levels. (Table 1) Perform record bias adjustment of High (CrO ₂) tape again, if the rating was not satisfied.
6	Confirmation of recorded level	AC-513 High (CrO ₂)	ACVM Audio frequency oscillator	PLAY		LINE OUT		Confirm recorded level rating as in step 4. When recorded level rating is improper, go back to step 3 and also carry out adjustments in step 5 again.

TEST MODE (Note 1)

Enter the TEST MODE by pressing the POWER SW while pressing the RESET KEY when the power is OFF.



● TOTAL FREQUENCY RESPONSE (-20dB)

Table 1

NR & TAPE	Rating
NR off Normal (LH)	
NR off High (CrO ₂)	
NR off METAL	
Dolby B NR on Normal (LH) High (CrO ₂) METAL	
Dolby C NR on Normal (LH) High (CrO ₂) METAL	

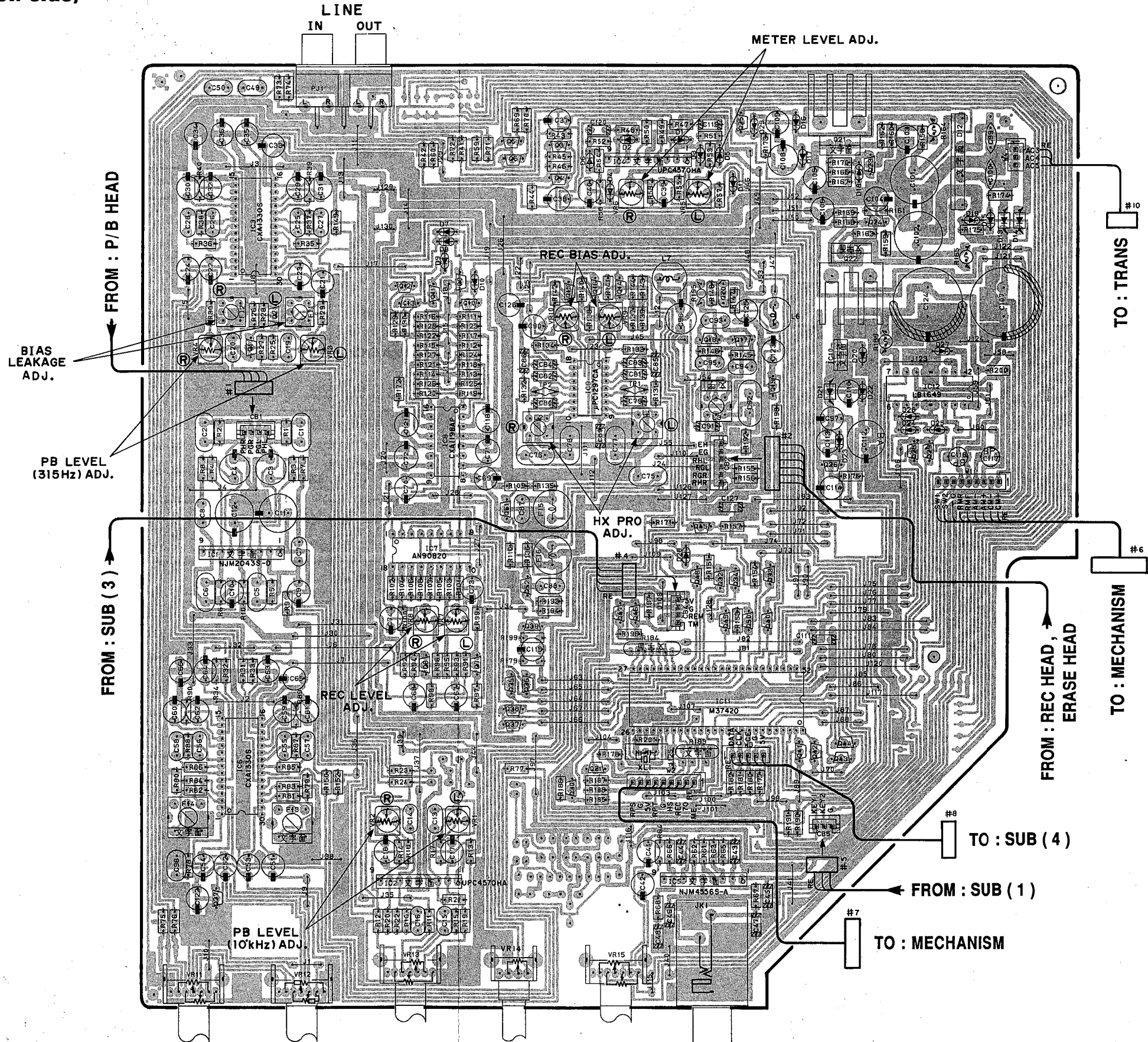
B & C NR : Reference level must be recorded level.

PRINTED CIRCUIT BOARD (Foil side)

MAIN P. C. B.

● Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D 1	E2	Q 1	C3
D 2	E2	Q 2	D2
D 3	E2	Q 3	E2
D 4	E2	Q 4	E2
D 5	F2	Q 5	E2
D 6	E2	Q 6	E2
D 7	D2	Q 7	D4
D 8	D2	Q 8	D4
D 9	D2	Q 9	D2
D 10	D2	Q 10	D2
D 11	F2	Q 11	D2
D 12	G2	Q 12	D2
D 13	G2	Q 13	D2
D 14	G2	Q 14	E2
D 15	G2	Q 15	E2
D 16	F2	Q 16	E2
D 17	F2	Q 17	F3
D 18	F2	Q 18	F3
D 19	G2	Q 19	F3
D 20	F3	Q 20	F2
D 21	F3	Q 21	F2
D 22	F3	Q 22	F2
D 23	F3	Q 23	F2
D 24	F3	Q 24	F2
D 25	G3	Q 25	F2
D 26	F3	Q 26	F3
D 27	G3	Q 27	C5
D 28	E4	Q 28	F3
D 29	F2	Q 29	G3
IC 1	C4	Q 30	E5
IC 2	D5	Q 31	E4
IC 3	C2	Q 32	F4
IC 4	E5	Q 33	F4
IC 5	E2	Q 34	F4
IC 6	C4	Q 35	E4
IC 7	D4	Q 36	E4
IC 8	D3	Q 37	E4
IC 9	E3	Q 38	E4
IC10	F3	Q 39	E4
IC11	F4	Q 40	F4
IC12	G3	Q 41	F4
		Q 42	F4
		Q 43	F4
		Q 44	F4
		Q 45	E3
		Q 46	E4
		Q 47	E4
		Q 48	E4
		Q 49	F4
		Q 50	F4
		Q 51	E3
		Q 52	E4

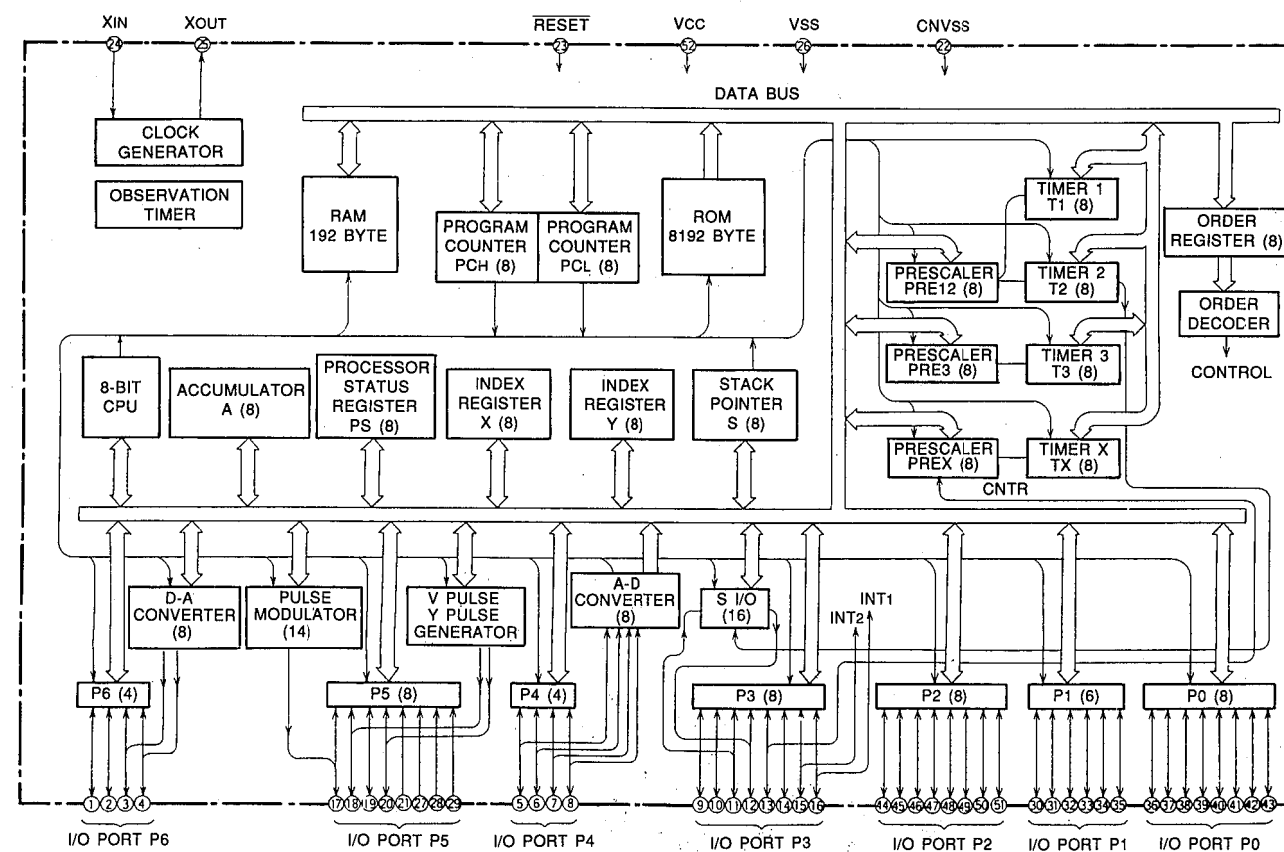
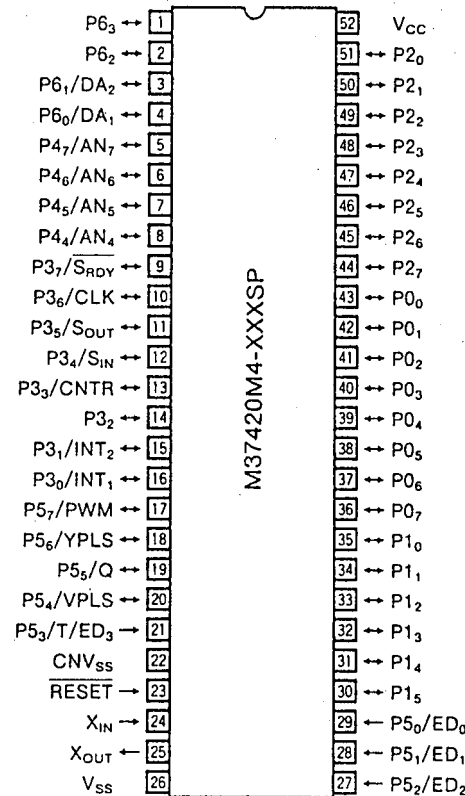


REC LEVEL BALANCE PLAY TRIM BIAS ADJUST LEVEL — PHONES

1
2
3
4
5
6

■ μ -COM DATA

IC11 : M37420M4-419SP



Pin No.	Name	Port Type	Function
1	P63	CMOS	Tape selector METAL OUT (L : ON)
2	P62	CMOS	Tape selector CrO ₂ OUT (L : ON)
3	P61	D/A	Bias ON/OFF OUT
4	P60	D/A	Auto bias OUT
5	P47	A/D	Meter input Lch
6	P46	A/D	Meter input Rch
7	P45	A/D	KEY (ST, PL, FF, RW, I+, I-, RP)
8	P44	A/D	KEY (RC, MU, RS, ME, RM, TP, MO, DL, TU)
9	P37	N-OD	LCD OUT (CE)
10	P36	N-OD	LCD OUT (CLK)
11	P35	N-OD	LCD OUT (Sout)
12	P34	N-OD	Mid-range level correction 0 OUT
13	P33	N-OD	400/2k/10k (Hz) OUT
14	P32	N-OD	Mid-range level correction 1 OUT
15	P31	N-OD	Remote control IN
16	P30	N-OD	SLEEP judgement [INT1] (H → L)
17	P57	CMOS	Metal SW IN
18	P56	CMOS	70 μ SW IN
19	P55	CMOS	Mis-erase SW IN (L : OK, H : NG)
20	P54	CMOS	Select music IN (L : MUSIC), REC LED OUT (L : ON)
21	P53	ESIN	Half SW IN (L : with, H : without)
22	CNV _{SS}		To V _{SS}
23	RES		Reset
24	X _{in}		Clock IN 8MHz
25	X _{out}		Clock OUT 8MHz
26	V _{SS}		GND
27	P52	ESIN	Take up reel pulse IN
28	P51	ESIN	Supply reel pulse IN
29	P50	ESIN	Power OFF detect (Edge sense input : H → L)
30	P15	N-OD	Timer 2 IN
31	P14	N-OD	Timer 1 IN
32	P13	N-OD	MECHANICAL POSITION SENSOR 2 IN
33	P12	N-OD	MECHANICAL POSITION SENSOR 1 IN
34	P11	N-OD	REC MUTE OUT (L : ON)
35	P10	N-OD	LINE MUTE OUT (L : ON)
36	P07	N-OD	Monitor switching OUT (L : SOURCE)
37	P06	N-OD	MPX OUT (H : ON)
38	P05	N-OD	DOLBY switching 2 OUT
39	P04	N-OD	DOLBY switching 1 OUT
40	P03	N-OD	REC level control 3 OUT (L : ON)
41	P02	N-OD	REC level control 2 OUT (L : ON)
42	P01	N-OD	REC level control 1 OUT (L : ON)
43	P00	N-OD	REC level control 0 OUT (L : ON)
44	P27	CMOS	Auto bias ON/OFF OUT (L : ON)
45	P26	CMOS	Tape selector NORM OUT (L : ON)
46	P25	CMOS	Assist motor - OUT
47	P24	CMOS	Assist motor + OUT
48	P23	CMOS	Reel motor REW+ OUT
49	P22	CMOS	Reel motor FF+ OUT
50	P21	CMOS	Reel speed \blacktriangleright OUT (H : ON)
51	P20	CMOS	Reel speed PLAY OUT (H : ON)
52	V _{CC}		+5V

* When resetting, making the port P54 rise in "L" sets the music select pulse "in port" and making it rise in "H" sets the REC LED OUT PORT. (In case of REC LED OUT PORT, use a meter input (A-D) which has been processed in the microprocessor for the select music pulse. With this, however, source monitoring is not possible while selecting the music.)

● Operation mode and output at each pin of microprocessor

Pin		Operation mode Function	STOP	PLAY	FF	SUPER FF	REW	REC/ PAUSE	REC/ PLAY	REC/ MUTE	AUTO TUNING	FF SEARCH
No.	Name											
34	P11	REC MUTE	L	L	L	L	L	L	H	L	H	L
35	P10	LINE MUTE *1	L	H	L	L	L	L	H	H	L	L
36	P07	MONITOR SELECT	—	H*2	—	—	—	L*3	—	—	—	H
44	P27	AUTO TAPE TUNING	L	L	L	L	L	L	L	L	H	L
3	P61	BIAS ON/OFF	L	L	L	L	L	—	H	H	H	L
48	P23	REEL MOTOR R	L	L	L	L	H	L	L	L	L	L
49	P22	REEL MOTOR F	L	H	H	H	L	L	H	H	H	H
50	P21	REEL SPEED ►	L	L	H	L	H	L	L	L	H/L*4	H
51	P20	REEL SPEED PLAY	H	H	L	L	L	H	H	H	H	L

Note) L : Low H : High — : unchanged (as set in previous mode)

*1 Set MONITOR in the TAPE mode. (always "L" when in SOURCE mode).

*2 When the mode has changed to the "PLAY" mode, the level becomes "H". (AUTO MONITOR)

*3 When the mode has changed to the REC/PAUSE mode, the level becomes "L". (AUTO MONITOR)

*4 "H" when the test signal is 400Hz and "L" otherwise.

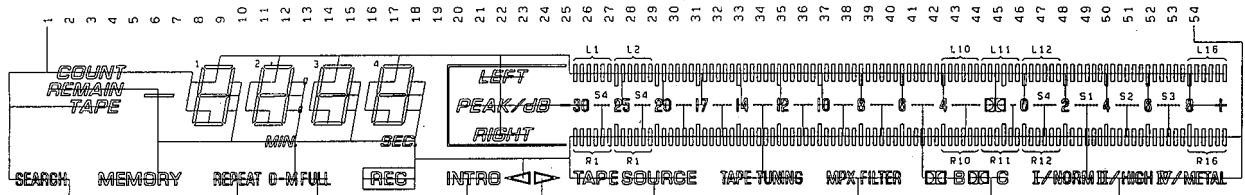
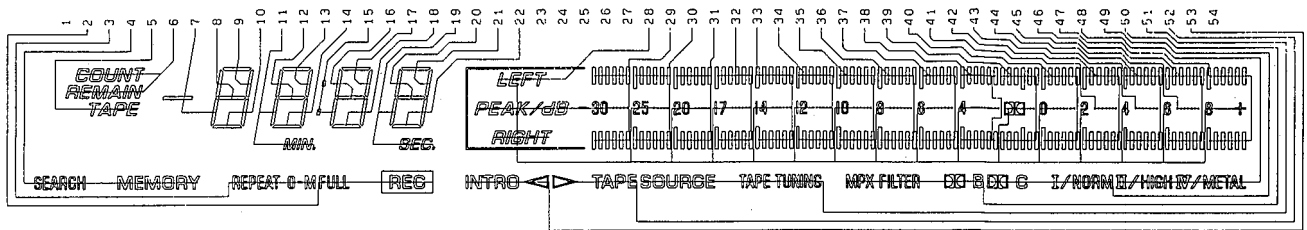
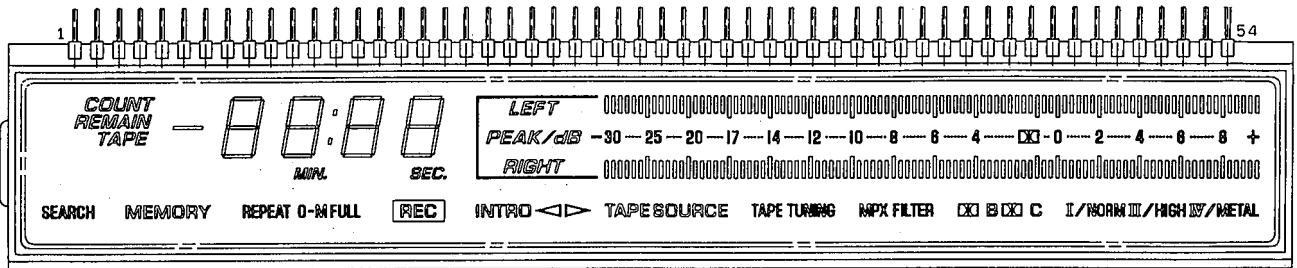
● DOLBY NR Circuit Select

Pin		Mode Function	MPX OFF			MPX ON		AUTO TUNING
No.	Name		OFF	B NR	C NR	B NR	C NR	
39	P04	DOLBY SELECT 1	H	H	L	H	L	H
38	P05	DOLBY SELECT 2	H	L	H	L	H	H
37	P06	MPX OUT	H	H	H	L	L	H
44	P27	AUTO TAPE TUNING	L	L	L	L	L	H
5	IC6 MODE SELECT		G	G	G	+V	+V	-V
26	IC3, 6 NR SELECT		-V	G	+V	G	+V	-V
5	IC3 MODE SELECT	TAPE mode : -V, SOURCE mode : G						

Note) G : 0±1V +V : ≥+5V -V : ≤-4V

■ DISPLAY DATA

● V301 : LCD8214B1JP (P/No. VO051000)



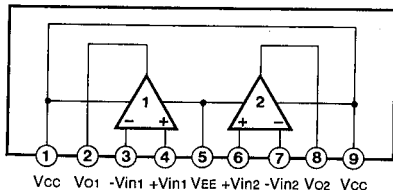
No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
COM1	COM	FULL	REPEAT	SEARCH	TAPE	COUNT	1e	1f	1a	1d	2e	2f	2a	2d	3e	3f	3a	3d	4e	4f	4a	4d	—	—	—	—	—
COM2	—	REC	O-M	MEMORY	—	REMAIN	—	1g	1b	1c	MIN.	2g	2b	2c	COL	3g	3b	3c	SEC.	4g	4b	4c	—	—	—	—	—

No.	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
COM1	1)	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	—	L13	—	L14	—	L15	L16	II/HIGH	<input type="checkbox"/> C	MPX FILTER	SOURCE	▷	INTRO	—
COM2	S4	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	S1	R13	S2	R14	S3	R15	R16	IV/METAL	INORM	<input type="checkbox"/> B	TAPE TUNING	TAPE	◁	COM

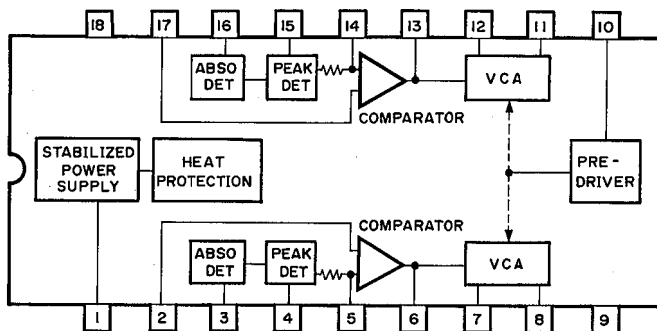
1) LEFT PEAK/dB RIGHT -30 25 20 17 14 12 10 8 6 4 0 2 4 6 8 +

■ IC BLOCK

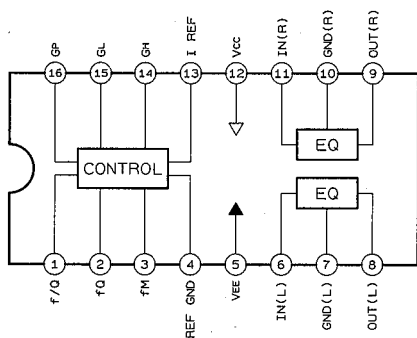
IC1 : NJM2043S-D or AN6557F
 IC2, 4 : μ PC4570HA
 IC5 : NJM4556S-A
 Dual OP-Amp



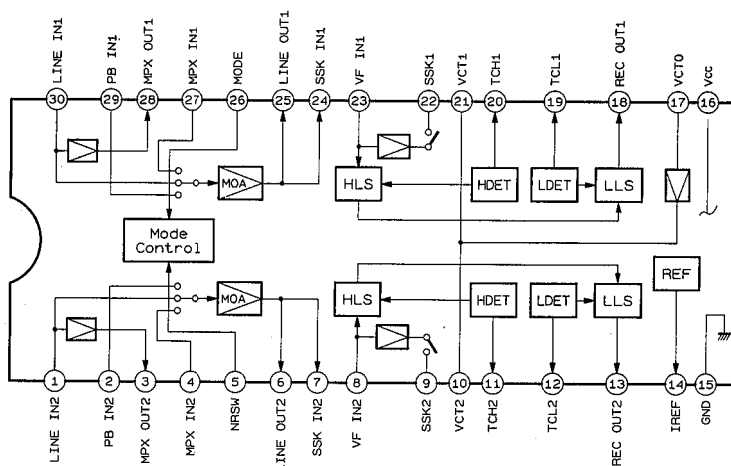
IC9 : μ PC1297CA
 Dolby HX PRO



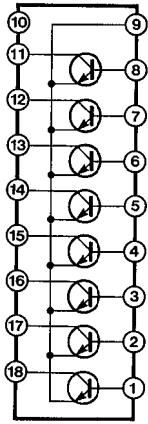
IC8 : CXA1198AP
 Recording Equalizer Amp



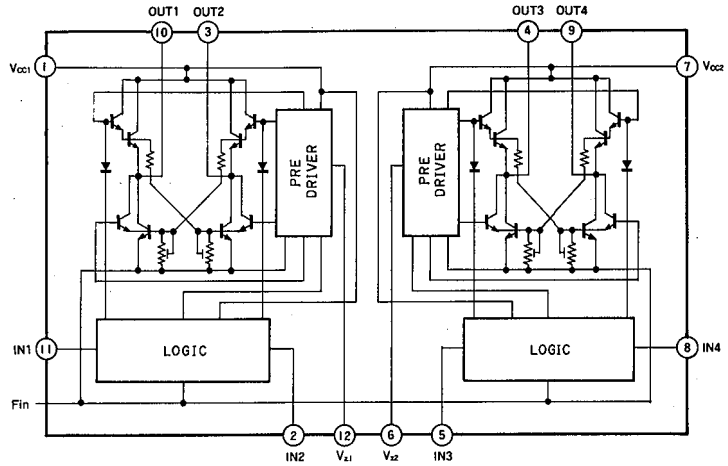
IC3, 6 : CXA1330S
 Dolby B & C-Type Noise Reduction Processor



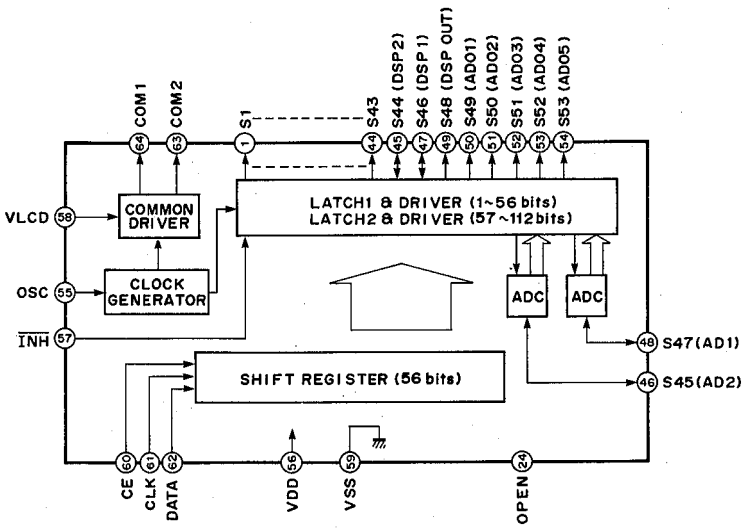
IC7 : AN90B20
Transistor Array



IC12 : LB1649
Motor Driver



IC301 : LC7582
LCD Driver



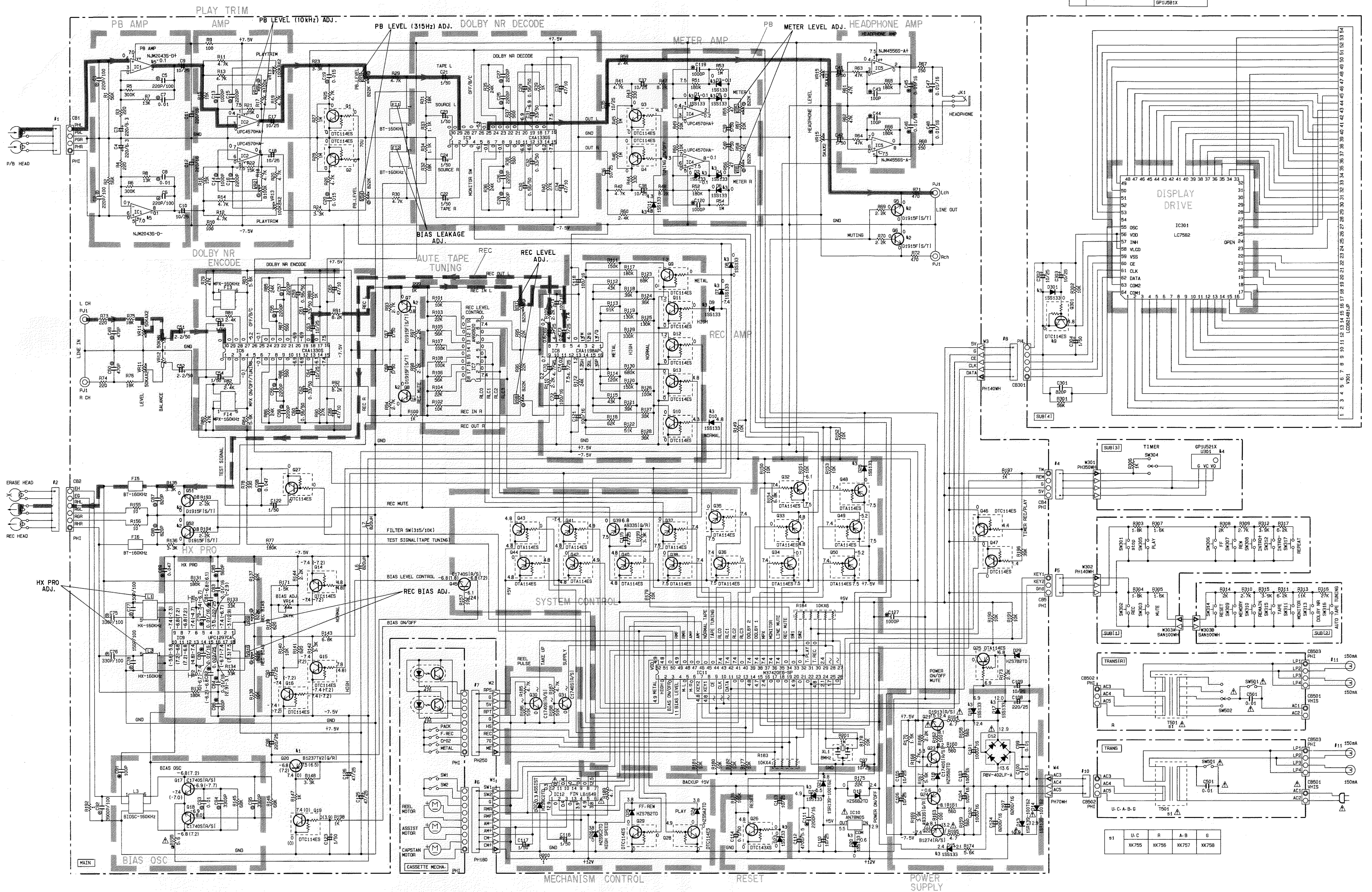
■ SCHEMATIC DIAGRAM

• The voltages are measured by LH tape at PLAY mode (no-signal condition).
Only the voltages () are at REC mode.

RESISTOR		CAPACITOR	
REMARKS	PARTS NAME	NO MARK	PARTS NAME
□	CARBON FILM RESISTOR (1/4W)	□	ELECTROLYTIC CAPACITOR
△	CARBON FILM RESISTOR (1/7W)	□	TANTALUM CAPACITOR
△	METAL OXIDE FILM RESISTOR	□	CERAMIC CAPACITOR
△	METAL FILM RESISTOR	○	AXIAL LEAD CERAMIC CAPACITOR
△	METAL PLATE RESISTOR	○	POLYESTER FILM CAPACITOR
△	FIRE PROOF CARBON FILM RESISTOR	○	POLYSTYRENE FILM CAPACITOR
□	CEMENT MOLDED RESISTOR	○	MICA CAPACITOR
□	SEMI VARIABLE RESISTOR	○	POLYPROPYLENE FILM CAPACITOR
□	CHIP RESISTOR	○	SEMICONDUCTIVE CERAMIC CAPACITOR

Interchangeable Parts at Manufacture-Stage

Mark	Reference Parts Number	Parts Name
41	Q20	2SB1237V2(G/R) 2SA1674(R/S)
42	Q5-8 51-52	2SD1915F(S,T) 2SC2878(A,B)
43	D1-11-15-17-20 22-23-28 301	1SS133 1SS176 1SS104
44	U301	GP1U221X GP1U221X
45	IC1	LM3043D-D AN6557F



PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICs.

2SA1674 (R,S) 2SB1237 (Q,R)	2SA933S (Q,R) 2SC1740S (S,R) DTA114ES DTC143XS 2SD1915F (S,T) 2SC2878 (A,B)	2SB1274 (R,S) 2SD1913 (R,S)	AN78N05	1SS133 1SR139-100 HZS5A2TD HZS5B2TD HZS5B2TD HZS5C2TD	RBV-402L-F	NJM4556S NJM2043S-D AN6557F μPC4570HA	LB1649	CXA1198AP	μPC1297CA AN90B20	CXA1330S	M37420E6-SP	LC7582
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TRANSISTOR NAME ABBREVIATIONS

Example
A933S (Q, R) : 2SA933S (Q, R)
B1357 (E, F) : 2SB1357 (E, F)
C1740S (R, S) : 2SC1740S (R, S)
D1915 (F) : 2SD1915 (F)

- All voltage are measured with a 10MΩ/VC electric volt meter.
- Components having special characteristics are marked △ and must be replaced with parts having specifications equal to those originally installed.
- Schematic diagram is subject to change without notice.

PARTS LIST

■ ELECTRICAL PARTS

■ WARNING

Components having special characteristics are marked \triangle and must be replaced with parts having specifications equal to those originally installed.

- Carbon resistors (1/6W or 1/4W) are not included in the ELECTRICAL PARTS List. For the parts No. of the carbon resistors, refer to P. 35.

Schm Ref.	PART NO.	Description	Remarks	Markets
*	VN195000	P. C. B. ASS'Y, MAIN		
CB1	VD004700	CONNECTOR	PH i-TYPE 4P TE	
CB2	VD004900	CONNECTOR	PH i-TYPE 6P TE	
CB4	VD004700	CONNECTOR	PH i-TYPE 4P TE	
CB5	VD004600	CONNECTOR	PH i-TYPE 3P TE	
C1	UT452220	POLYPROPYLENE FILM CAP	220pF 100V	
C2	UT452220	POLYPROPYLENE FILM CAP	220pF 100V	
C3	VE016600	ELECTROLYTIC CAP	220uF 6.3V	
C4	VE016600	ELECTROLYTIC CAP	220uF 6.3V	
C5	UT452220	POLYPROPYLENE FILM CAP	220pF 100V	
C6	UT452220	POLYPROPYLENE FILM CAP	220pF 100V	
C7	UA654100	MYLAR FILM CAP	0.01uF 50V	
C8	UA654100	MYLAR FILM CAP	0.01uF 50V	
C9	UM417100	ELECTROLYTIC CAP	10uF 50V	
C10	UM417100	ELECTROLYTIC CAP	10uF 50V	
C11	VE018000	ELECTROLYTIC CAP	220uF 16V	
C12	VE018000	ELECTROLYTIC CAP	220uF 16V	
C13	UA653100	MYLAR FILM CAP	1000pF 50V	
C14	UA653100	MYLAR FILM CAP	1000pF 50V	
C15	UA653220	MYLAR FILM CAP	2200pF 50V	
C16	UA653220	MYLAR FILM CAP	2200pF 50V	
C17	UM417100	ELECTROLYTIC CAP	10uF 50V	
C18	UM417100	ELECTROLYTIC CAP	10uF 50V	
C19	UA654150	MYLAR FILM CAP	0.015uF 50V	
C20	UA654150	MYLAR FILM CAP	0.015uF 50V	
C21	VJ839100	ELECTROLYTIC CAP	1uF 50V	
C22	VJ839100	ELECTROLYTIC CAP	1uF 50V	
C23	VJ839100	ELECTROLYTIC CAP	1uF 50V	
C24	VJ839100	ELECTROLYTIC CAP	1uF 50V	
C25	UA653220	MYLAR FILM CAP	2200pF 50V	
C26	UA653220	MYLAR FILM CAP	2200pF 50V	
C27	UA653220	MYLAR FILM CAP	2200pF 50V	
C28	UA653220	MYLAR FILM CAP	2200pF 50V	
C29	VJ395000	ELECTROLYTIC CAP	0.56uF 50V	
C30	VJ395000	ELECTROLYTIC CAP	0.56uF 50V	
C31	VJ402700	ELECTROLYTIC CAP	0.33uF 50V	
C32	VJ402700	ELECTROLYTIC CAP	0.33uF 50V	
C33	VJ837200	ELECTROLYTIC CAP	47uF 16V	
C34	VJ837200	ELECTROLYTIC CAP	47uF 16V	
C35	UM417100	ELECTROLYTIC CAP	10uF 50V	
C36	UM417100	ELECTROLYTIC CAP	10uF 50V	
C37	UM417100	ELECTROLYTIC CAP	10uF 50V	
C38	UM417100	ELECTROLYTIC CAP	10uF 50V	
C39	VJ839100	ELECTROLYTIC CAP	1uF 50V	
C40	VJ839100	ELECTROLYTIC CAP	1uF 50V	
C41	VJ839100	ELECTROLYTIC CAP	1uF 50V	
C42	VJ839100	ELECTROLYTIC CAP	1uF 50V	
C43	VF466800	CERAMIC TUBULAR CAP	100pF 50V	
C44	VF466800	CERAMIC TUBULAR CAP	100pF 50V	
C45	VF467300	CERAMIC TUBULAR CAP	0.01uF 16V	
C46	VF467300	CERAMIC TUBULAR CAP	0.01uF 16V	
C47	VF467300	CERAMIC TUBULAR CAP	0.01uF 16V	
C48	VF467300	CERAMIC TUBULAR CAP	0.01uF 16V	

*New Parts (新規部品)

Schm	Ref. PART NO.	Description	Remarks	Markets
C49	UA652470	MYLAR FILM CAP	470pF	50V
C50	UA652470	MYLAR FILM CAP	470pF	50V
C51	VJ839200	ELECTROLYTIC CAP	2.2uF	50V
C52	VJ839200	ELECTROLYTIC CAP	2.2uF	50V
C53	VJ839100	ELECTROLYTIC CAP	1uF	50V
C54	VJ839100	ELECTROLYTIC CAP	1uF	50V
C55	UA653220	MYLAR FILM CAP	2200pF	50V
C56	UA653220	MYLAR FILM CAP	2200pF	50V
C57	UA653220	MYLAR FILM CAP	2200pF	50V
C58	UA653220	MYLAR FILM CAP	2200pF	50V
C59	VJ395000	ELECTROLYTIC CAP	0.56uF	50V
C60	VJ395000	ELECTROLYTIC CAP	0.56uF	50V
C61	VJ402700	ELECTROLYTIC CAP	0.33uF	50V
C62	VJ402700	ELECTROLYTIC CAP	0.33uF	50V
C63	UM417100	ELECTROLYTIC CAP	10uF	50V
C64	UM417100	ELECTROLYTIC CAP	10uF	50V
C65	VJ837200	ELECTROLYTIC CAP	47uF	16V
C66	VJ837200	ELECTROLYTIC CAP	47uF	16V
C67	VJ839100	ELECTROLYTIC CAP	1uF	50V
C68	VJ839100	ELECTROLYTIC CAP	1uF	50V
C69	UM416470	ELECTROLYTIC CAP	4.7uF	50V
C70	UM416470	ELECTROLYTIC CAP	4.7uF	50V
C71	VF964800	ELECTROLYTIC CAP	100uF	16V
C72	VF964800	ELECTROLYTIC CAP	100uF	16V
C73	UM416470	ELECTROLYTIC CAP	4.7uF	50V
C74	UM416470	ELECTROLYTIC CAP	4.7uF	50V
C75	UT452330	POLYPROPYLENE FILM CAP	330pF	100V
C76	UT452330	POLYPROPYLENE FILM CAP	330pF	100V
C77	UT452150	POLYPROPYLENE FILM CAP	150pF	100V
C78	UT452150	POLYPROPYLENE FILM CAP	150pF	100V
C79	VF467300	CERAMIC TUBULAR CAP	0.01uF	16V
C80	VF467300	CERAMIC TUBULAR CAP	0.01uF	16V
C81	VG280100	CERAMIC TUBULAR CAP	0.022uF	25V
C82	VG280100	CERAMIC TUBULAR CAP	0.022uF	25V
C83	VF467300	CERAMIC TUBULAR CAP	0.01uF	16V
C84	VF467300	CERAMIC TUBULAR CAP	0.01uF	16V
C85	VG278800	CERAMIC TUBULAR CAP	560pF	50V
C86	VG278800	CERAMIC TUBULAR CAP	560pF	50V
C87	UA652820	MYLAR FILM CAP	820pF	50V
C88	UA652820	MYLAR FILM CAP	820pF	50V
C89	Vi101300	CERAMIC TUBULAR CAP	0.047uF	50V
C90	UJ667470	ELECTROLYTIC CAP	47uF	50V
C91	VF466800	CERAMIC TUBULAR CAP	100pF	50V
C92	UT453390	POLYPROPYLENE FILM CAP	3900pF	100V
C93	UA654100	MYLAR FILM CAP	0.01uF	50V
C94	UA653330	MYLAR FILM CAP	3300pF	50V
C95	UA653330	MYLAR FILM CAP	3300pF	50V
C96	UJ648220	ELECTROLYTIC CAP	220uF	25V
C97	UM417100	ELECTROLYTIC CAP	10uF	50V
C98	UA654470	MYLAR FILM CAP	0.047uF	50V
C99	UG444100	CERAMIC CAP	0.01uF	50V
C100	UG444100	CERAMIC CAP	0.01uF	50V
C101	VN137400	ELECTROLYTIC CAP	1000uF	16V

*New Parts (新規部品)

Schm	Ref. PART NO.	Description	Remarks	Markets
	C102	VN137400 ELECTROLYTIC CAP	1000uF 16V	
	C103	VF964800 ELECTROLYTIC CAP	100uF 16V	
	C104	VF964800 ELECTROLYTIC CAP	100uF 16V	
	C105	VE742700 ELECTROLYTIC CAP	10uF 50V	
	C106	VE742700 ELECTROLYTIC CAP	10uF 50V	
	C107	UJ739820 ELECTROLYTIC CAP	8200uF 16V	
	C108	UJ648220 ELECTROLYTIC CAP	220uF 25V	
	C109	UM417100 ELECTROLYTIC CAP	10uF 50V	
	C110	UM417100 ELECTROLYTIC CAP	10uF 50V	
	C111	VG279400 CERAMIC TUBULAR CAP	2200pF 16V	
	C112	VC613700 ELECTROLYTIC CAP	4700uF 5.5V	
	C113	UM417100 ELECTROLYTIC CAP	10uF 50V	
	C114	UM215100 ELECTROLYTIC CAP	0.1uF 50V	
	C115	UJ667470 ELECTROLYTIC CAP	47uF 50V	
	C116	VG722100 ELECTROLYTIC CAP	1uF 50V	
	C117	VG722100 ELECTROLYTIC CAP	1uF 50V	
	C118	VF964800 ELECTROLYTIC CAP	100uF 16V	
	C119	VF467000 CERAMIC TUBALAR CAP	1000pF 50V	
	C120	VF467000 CERAMIC TUBALAR CAP	1000pF 50V	
	C121	VF964800 ELECTROLYTIC CAP	100uF 16V	
	C122	VJ839100 ELECTROLYTIC CAP	1uF 50V	
	C123	VJ839100 ELECTROLYTIC CAP	1uF 50V	
	C124	UJ739820 ELECTROLYTIC CAP	8200uF 16V	
	C125	UJ667470 ELECTROLYTIC CAP	47uF 50V	
	C126	UJ667470 ELECTROLYTIC CAP	47uF 50V	
	C127	VF467000 CERAMIC TUBALAR CAP	1000pF 50V	
	D1	VD631600 DIODE	1SS133,176,HSS104	
	D2	VD631600 DIODE	1SS133,176,HSS104	
	D3	VD631600 DIODE	1SS133,176,HSS104	
	D4	VD631600 DIODE	1SS133,176,HSS104	
	D5	VD631600 DIODE	1SS133,176,HSS104	
	D6	VD631600 DIODE	1SS133,176,HSS104	
	D7	VD631600 DIODE	1SS133,176,HSS104	
	D8	VD631600 DIODE	1SS133,176,HSS104	
	D9	VD631600 DIODE	1SS133,176,HSS104	
	D10	VD631600 DIODE	1SS133,176,HSS104	
	D11	VD631600 DIODE	1SS133,176,HSS104	
	D12	VH348200 DIODE BRIDGE	RBV-402 LF-A	
	D13	VH801600 DIODE	1SR139-100	
	D14	VH801600 DIODE	1SR139-100	
	D15	VD631600 DIODE	1SS133,176,HSS104	
	D16	VD631600 DIODE	1SS133,176,HSS104	
	D17	VD631600 DIODE	1SS133,176,HSS104	
	D18	VG437400 ZENER DIODE	MTZJ5.1B 5.1V	
*	D19	VM974400 ZENER DIODE	HZS6B2TD 6.0V	
	D20	VD631600 DIODE	1SS133,176,HSS104	
	D21	VH801600 DIODE	1SR139-100	
	D22	VD631600 DIODE	1SS133,176,HSS104	
	D23	VD631600 DIODE	1SS133,176,HSS104	
	D24	VM974000 ZENER DIODE	HZS5A2TD 5.0V	
*	D25	VM974700 ZENER DIODE	HZS7B2TD 7.0V	
	D26	VM975100 ZENER DIODE	HZS9C2TD 9.0V	
	D27	VM975100 ZENER DIODE	HZS9C2TD 9.0V	

*New Parts (新規部品)

△
△
△

Schm	Ref. PART NO.	Description	Remarks	Markets
	D28	VD631600 DIODE	1SS133,176,HSS104	
*	D29	VM974700 ZENER DIODE	HZS7B2TD 7.0V	
*	Fi1	VN766200 COIL, BIAS TRAP	160KHz	
*	Fi2	VN766200 COIL, BIAS TRAP	160KHz	
	Fi3	VM548100 LC FILTER	160KHz MPX	
	Fi4	VM548100 LC FILTER	160KHz MPX	
	Fi5	VM548200 LC FILTER	160KHz BEF	
	Fi6	VM548200 LC FILTER	160KHz BEF	
	IC1	iG082900 IC	NJM2043S-D	
	IC2	XB247301 IC	uPC4570HA	
	IC3	XH105A00 IC	CXA1330S	
	IC4	XB247301 IC	uPC4570HA	
	IC5	iG077410 IC	NJM4556S-A	
	IC6	XH105A00 IC	CXA1330S	
	IC7	iG089900 IC	AN90B20	
	IC8	XH104A00 IC	CXA1198AP	
	IC9	XA300A00 IC	uPC1297CA	
	IC10	XA507A00 IC	AN78N05	
*	IC11	XL204A00 IC	M37420M4-419SP	△
	IC12	XA299A00 IC	LB1649	△
	JK1	LB301370 PHONES JACK	M1658-K	
	L1	VM548000 COIL, STEP UP	160KHz	
	L2	VM548000 COIL, STEP UP	160KHz	
*	L3	V0048000 COIL	160KHz	
	L6	GE900960 COIL	820uH	
	L7	GE900960 COIL	820uH	
	PJ1	LB401050 PIN JACK	4P	
	Q1	VD678700 DIGITAL TRANSISTOR	DTC114ES	
	Q2	VD678700 DIGITAL TRANSISTOR	DTC114ES	
	Q3	VD678700 DIGITAL TRANSISTOR	DTC114ES	
	Q4	VD678700 DIGITAL TRANSISTOR	DTC114ES	
	Q5	VK432900 TRANSISTOR	2SD1915(F) S,T	
	Q6	VK432900 TRANSISTOR	2SD1915(F) S,T	
	Q7	VK432900 TRANSISTOR	2SD1915(F) S,T	
	Q8	VK432900 TRANSISTOR	2SD1915(F) S,T	
	Q9	VD678700 DIGITAL TRANSISTOR	DTC114ES	
	Q10	VD678700 DIGITAL TRANSISTOR	DTC114ES	
	Q11	VD678700 DIGITAL TRANSISTOR	DTC114ES	
	Q12	VD678700 DIGITAL TRANSISTOR	DTC114ES	
	Q13	VD678700 DIGITAL TRANSISTOR	DTC114ES	
	Q14	VD678700 DIGITAL TRANSISTOR	DTC114ES	
	Q15	VD678700 DIGITAL TRANSISTOR	DTC114ES	
	Q16	VD678700 DIGITAL TRANSISTOR	DTC114ES	
	Q17	iC174020 TRANSISTOR	2SC1740S R,S	
	Q18	iC174020 TRANSISTOR	2SC1740S R,S	
	Q19	VD678700 DIGITAL TRANSISTOR	DTC114ES	
	Q20	VE613300 TRANSISTOR	2SB1237 Q,R	
	Q21	VC407900 TRANSISTOR	2SD1913 R,S	
	Q22	VC614000 TRANSISTOR	2SB1274 Q,R,S	△
	Q23	iC174020 TRANSISTOR	2SC1740S R,S	△
	Q24	iA093320 TRANSISTOR	2SA933S Q,R	
	Q25	VD678500 DIGITAL TRANSISTOR	DTA114ES	
	Q26	VD488500 DIGITAL TRANSISTOR	DTC143XS	

*New Parts (新規部品)

Schm Ref. PART NO.	Description	Remarks	Markets
Q27	VD678700 DIGITAL TRANSISTOR	DTC114ES	
Q28	VD678700 DIGITAL TRANSISTOR	DTC114ES	
Q29	VD678700 DIGITAL TRANSISTOR	DTC114ES	
Q30	iC174020 TRANSISTOR	2SC1740S R,S	
Q31	iC174020 TRANSISTOR	2SC1740S R,S	
Q32	VD678500 DIGITAL TRANSISTOR	DTA114ES	
Q33	VD678500 DIGITAL TRANSISTOR	DTA114ES	
Q34	VD678500 DIGITAL TRANSISTOR	DTA114ES	
Q35	VD678500 DIGITAL TRANSISTOR	DTA114ES	
Q36	VD678500 DIGITAL TRANSISTOR	DTA114ES	
Q37	VD678500 DIGITAL TRANSISTOR	DTA114ES	
Q38	VD678500 DIGITAL TRANSISTOR	DTA114ES	
Q39	iA093320 TRANSISTOR	2SA933S Q,R	
Q40	VD678500 DIGITAL TRANSISTOR	DTA114ES	
Q41	VD678500 DIGITAL TRANSISTOR	DTA114ES	
Q42	VD678500 DIGITAL TRANSISTOR	DTA114ES	
Q43	VD678500 DIGITAL TRANSISTOR	DTA114ES	
Q44	VD678500 DIGITAL TRANSISTOR	DTA114ES	
Q45	iC174020 TRANSISTOR	2SC1740S R,S	
Q46	VD678700 DIGITAL TRANSISTOR	DTC114ES	
Q47	VD678700 DIGITAL TRANSISTOR	DTC114ES	
Q48	VD678500 DIGITAL TRANSISTOR	DTA114ES	
Q49	VD678500 DIGITAL TRANSISTOR	DTA114ES	
Q50	VD678500 DIGITAL TRANSISTOR	DTA114ES	
Q51	VK432900 TRANSISTOR	2SD1915(F) S,T	
Q52	VK432900 TRANSISTOR	2SD1915(F) S,T	
R164	VE009700 FUSABLE RESISTOR	4.7Ω 1/4W	△
R165	VE009700 FUSABLE RESISTOR	4.7Ω 1/4W	△
R183	VG734100 RESISTOR ARRAY	10KΩ x4	
R184	VG734300 RESISTOR ARRAY	10KΩ x6	
R189	VE009700 FUSABLE RESISTOR	4.7Ω 1/4W	△
R195	HV453560 FLAME PROOF CARBON RESISTOR	5.6Ω 1/4W	△
TP1	VL448600 JUMPER, TEST POINT		
TP2	VL448600 JUMPER, TEST POINT		
VR1	VJ694200 TRIMMER POTENTIOMETER	B100KΩ	
VR2	VJ694200 TRIMMER POTENTIOMETER	B100KΩ	
VR3	VJ693800 TRIMMER POTENTIOMETER	B22KΩ	
VR4	VJ693800 TRIMMER POTENTIOMETER	B22KΩ	
VR5	VJ693800 TRIMMER POTENTIOMETER	B22KΩ	
VR6	VJ693800 TRIMMER POTENTIOMETER	B22KΩ	
VR7	VJ693800 TRIMMER POTENTIOMETER	B22KΩ	
VR8	VJ693800 TRIMMER POTENTIOMETER	B22KΩ	
VR9	VJ693800 TRIMMER POTENTIOMETER	B22KΩ	
VR10	VJ693800 TRIMMER POTENTIOMETER	B22KΩ	
VR11	VM640900 ROTARY POTENTIOMETER	A50KΩ	
VR12	VM641100 ROTARY POTENTIOMETER	MN50KΩ	
VR13	VM641000 ROTARY POTENTIOMETER	B100KΩ	
VR14	VG237500 ROTARY POTENTIOMETER	2KΩ	
VR15	VM640800 ROTARY POTENTIOMETER	A5KΩ	
XL1	VD794300 CERAMIC RESONATOR	8MHz	
	VN126800 HEAT SINK	UOT-16C25-MP	
	VB966900 CONNECTOR	IMSA-6024	

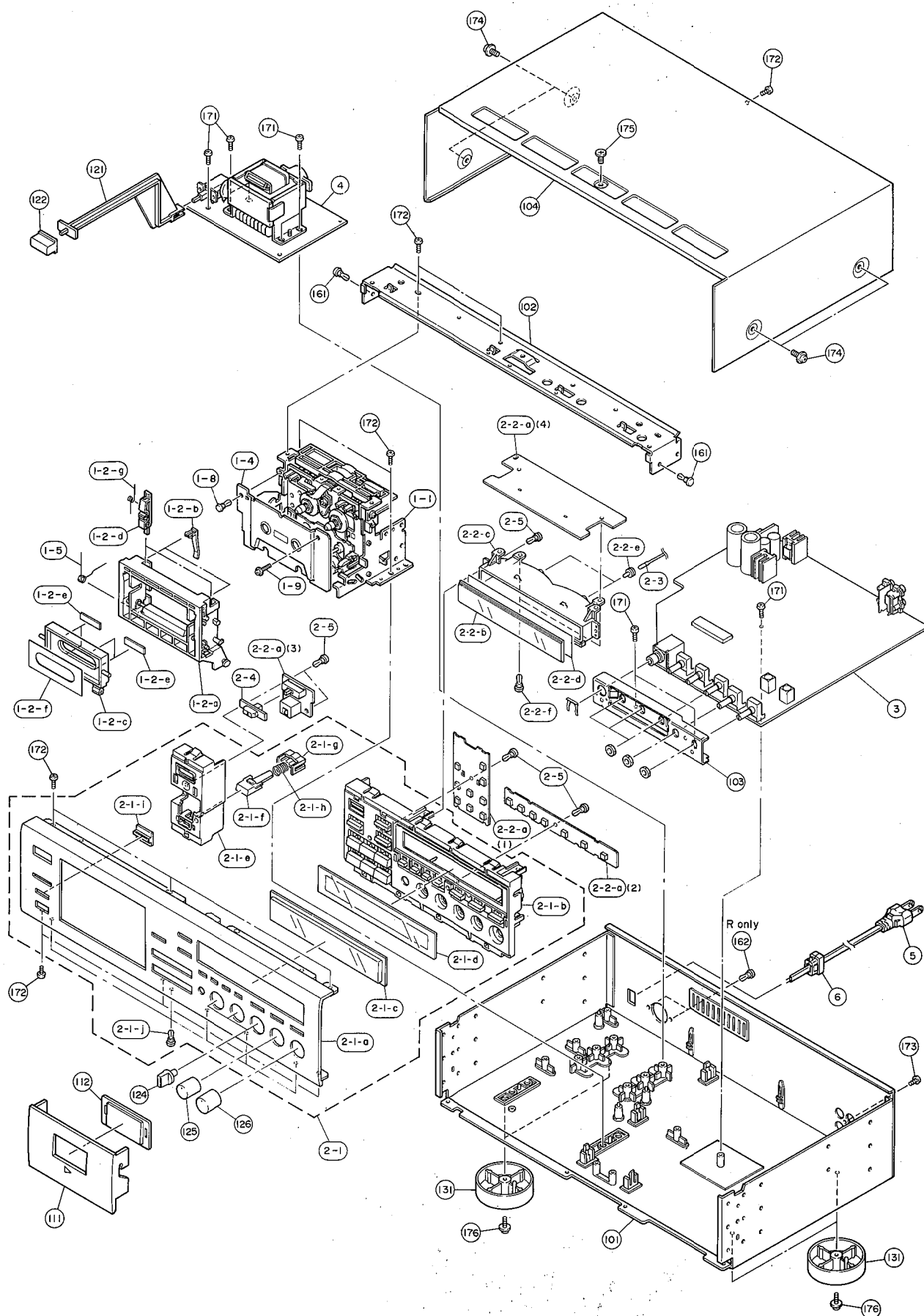
*New Parts (新規部品)

Schm Ref. PART NO.	Description	Remarks	Markets
* VN195100 P.C.B. ASS'y, SUB			
CB301	VB858400 CONNECTOR	PH L-TYPE 5P SE	
C301	FG212820 CERAMIC CAP	820pF 50V	
C302	UM417100 ELECTROLYTIC CAP	10uF 50V	
C303	UM417100 ELECTROLYTIC CAP	10uF 50V	
C304	VJ839100 ELECTROLYTIC CAP	1uF 50V	
D301	VD631600 DIODE	1SS133,176,HSS104	
IC301	XB417A00 IC	LC7582	
Q301	VD678700 DIGITAL TRANSISTOR	DTC114ES	
SW301	VG392900 SWITCH	SKHVAA	
SW302	VG392900 SWITCH	SKHVAA	
SW303	VG392900 SWITCH	SKHVAA	
SW304	VB114200 SLIDE SWITCH	1-3	
SW305	VG392900 SWITCH	SKHVAA	
SW306	VG392900 SWITCH	SKHVAA	
SW307	VG392900 SWITCH	SKHVAA	
SW308	VG392900 SWITCH	SKHVAA	
SW309	VG392900 SWITCH	SKHVAA	
SW310	VG392900 SWITCH	SKHVAA	
SW311	VG392900 SWITCH	SKHVAA	
SW312	VG392900 SWITCH	SKHVAA	
SW313	VG392900 SWITCH	SKHVAA	
SW314	VG392900 SWITCH	SKHVAA	
SW315	VG392900 SWITCH	SKHVAA	
SW316	VG392900 SWITCH	SKHVAA	
SW317	VG392900 SWITCH	SKHVAA	
U301	VG990800 LIGHT DETECTING MODULE	GP1U521X	
VN177000 P.C.B. ASS'y, TRANS. UC			
VN177100 P.C.B. ASS'y, TRANS. R			
VN177200 P.C.B. ASS'y, TRANS. AB			
VN177300 P.C.B. ASS'y, TRANS. G			
C501	Fi514100 RECOGNIZED CERAMIC CAP	0.01uF VA-1	△
CB501	VG879900 CONNECTOR	VH 2P TE	△
CB502	VD004600 CONNECTOR	PH i-TYPE 3P TE	
CB503	VD004700 CONNECTOR	PH i-TYPE 4P TE	
SW501	VC133100 PUSH SWITCH	SDDL1	△
SW502	VG388100 VOLTAGE SELECTOR	HXW0244-01-080	R △
T501	XK755A00 POWER TRANSFORMER		UC △
T501	XK756A00 POWER TRANSFORMER		R △
T501	XK757A00 POWER TRANSFORMER		AB △
T501	XK758A00 POWER TRANSFORMER		G △
	Ei030086 BIND HEAD B-TITE SCREW	3x8 ZMC2-Y PACK	PACK

*New Parts (新規部品)

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MECHANICAL PARTS Note) Ø : Diameter

Ref No.	PART NO.	Description	Remarks	Markets
* 1-1	VM986200	CASSETTE DECK MECHANISM		
1-2-a	VM633600	HOUSING, CASSETTE		
1-2-b	VM868200	GUIDE, CASSETTE		
1-2-c	VK918800	PLATE, DAMPER		
1-2-d	VK918900	LEVER, DAMPER		
1-2-e	VK919000	DAMPER		
1-2-f	VM873200	SHEET, DAMPER		BL
1-2-f	VM873300	SHEET, DAMPER		TI
1-2-g	VM873700	SPRING	T	
1-4	VM635900	BACK PLATE		
1-5	VM873800	SPRING	EJ	
1-8	CB099600	PLASTIC RIVET	No. 920	
1-9	EK096060	BW HEAD S-TITE SCREW	2.5x12	FCRM3-BL
* 2-1	VN252900	FRONT PANEL ASS' y		BL
* 2-1	VN253000	FRONT PANEL ASS' y		TI
* 2-1-a	VM680100	FRONT PANEL		BL
* 2-1-a	VM680200	FRONT PANEL		TI
2-1-b	VM634900	SUB PANEL		BL
* 2-1-b	VP888100	SUB PANEL		TI
2-1-c	VJ923700	WINDOW PANEL		
2-1-d	VJ924000	SHEET		BL
2-1-e	VM634000	BUTTON GUIDE, EJ		BL
2-1-e	VM634100	BUTTON GUIDE, EJ		TI
2-1-f	Vi658100	BUTTON, EJ		BL
2-1-f	VP512300	BUTTON, EJ		TI
2-1-g	VK916700	BUTTON GUIDE		
2-1-h	VM873600	SPRING	C	
2-1-i	VH897500	LENS		
2-1-j	CB068880	PLASTIC RIVET	No. 1027	
* 2-2-a	VN195100	P.C.B. ASS' y, SUB		
* 2-2-b	VO051000	LCD	LCD8214B1JP	
2-2-c	VH400200	REFLECTOR		
2-2-d	VH409600	SHEET, DIFFUSION		
2-2-e	VF444500	LAMP CAP	AG-4015	
2-2-f	CB605620	PLASTIC RIVET	No. 1781	
2-3	Vi284600	LAMP	150mA	8V
2-4	CB657120	KNOB		BL TIMER
2-4	VP512100	KNOB		TI TIMER
2-5	CB605620	PLASTIC RIVET	No. 1781	
* 3	VN195000	P.C.B. ASS' y, MAIN		
* 4	VN177000	P.C.B. ASS' y, TRANS.		UC
* 4	VN177100	P.C.B. ASS' y, TRANS.		R
* 4	VN177200	P.C.B. ASS' y, TRANS.		AB
* 4	VN177300	P.C.B. ASS' y, TRANS.		G
5	VL012900	POWER CORD ASS' y		UC
5	VL238100	POWER CORD ASS' y		R
5	VL238400	POWER CORD ASS' y		A
5	VL238900	POWER CORD ASS' y		G
5	VN804500	POWER CORD ASS' y		B
6	VN158600	CORD STOPPER	No. 2104	
101	VM871200	CHASSIS		UCABG
101	VM871400	CHASSIS		R
102	VM634400	TOP FRAME		

*New Parts (新規部品)

Ref No.	PART NO.	Description	Remarks	Markets
103	VM634700	BRACKET, VR		
104	VN211600	TOP COVER	BL	
104	VN211700	TOP COVER	TI	
*	VM909500	SUB PANEL, LID	BL	
*	VM909600	SUB PANEL, LID	TI	
112	VM633400	WINDOW PANEL, LID		
121	VM633500	EXTENSION BAR	P	
122	VH889400	BUTTON	BL POWER	
122	VP511400	BUTTON	TI POWER	
124	VP511500	KNOB	BL BIAS,TRIM	
124	VP511600	KNOB	TI BIAS,TRIM	
125	VP511700	KNOB	BL BALANCE	
125	VP511800	KNOB	TI BALANCE	
126	VP511900	KNOB	BL REC LEVEL	
126	VP512000	KNOB	TI REC LEVEL	
131	VK016500	LEG	D60/H21	
161	CB099600	PLASTIC RIVET	No. 920	
162	CB609260	PLASTIC RIVET	No. 6206	
171	EK093040	BIND HEAD TAPPING SCREW	3x12	ZMC2-Y
172	E1330086	BIND HEAD B-TITE SCREW	3x8	FCRM3-BL PACK
173	EN335030	BIND HEAD BONDING TAP. SCREW	3x10	FCRM3-BL
174	EK365090	BW HEAD SCREW	4x8	ZMC2-BL BL
174	EX601150	BW HEAD S-TITE SCREW	4x8-10	FNM3-BL TI
175	EX601850	SPECIAL SCREW S-TITE	4x8-10	FCRM3-BL BL
175	EX601860	SPECIAL SCREW S-TITE	4x8-10	FNM3-BL TI
176	EK930010	BW HEAD TAPPING SCREW	3x8-8	FCRM3-BL
		ACCESSORIES		
	VN159900	PIN-PLUG CORD		1.0m

*New Parts (新規部品)

A

B

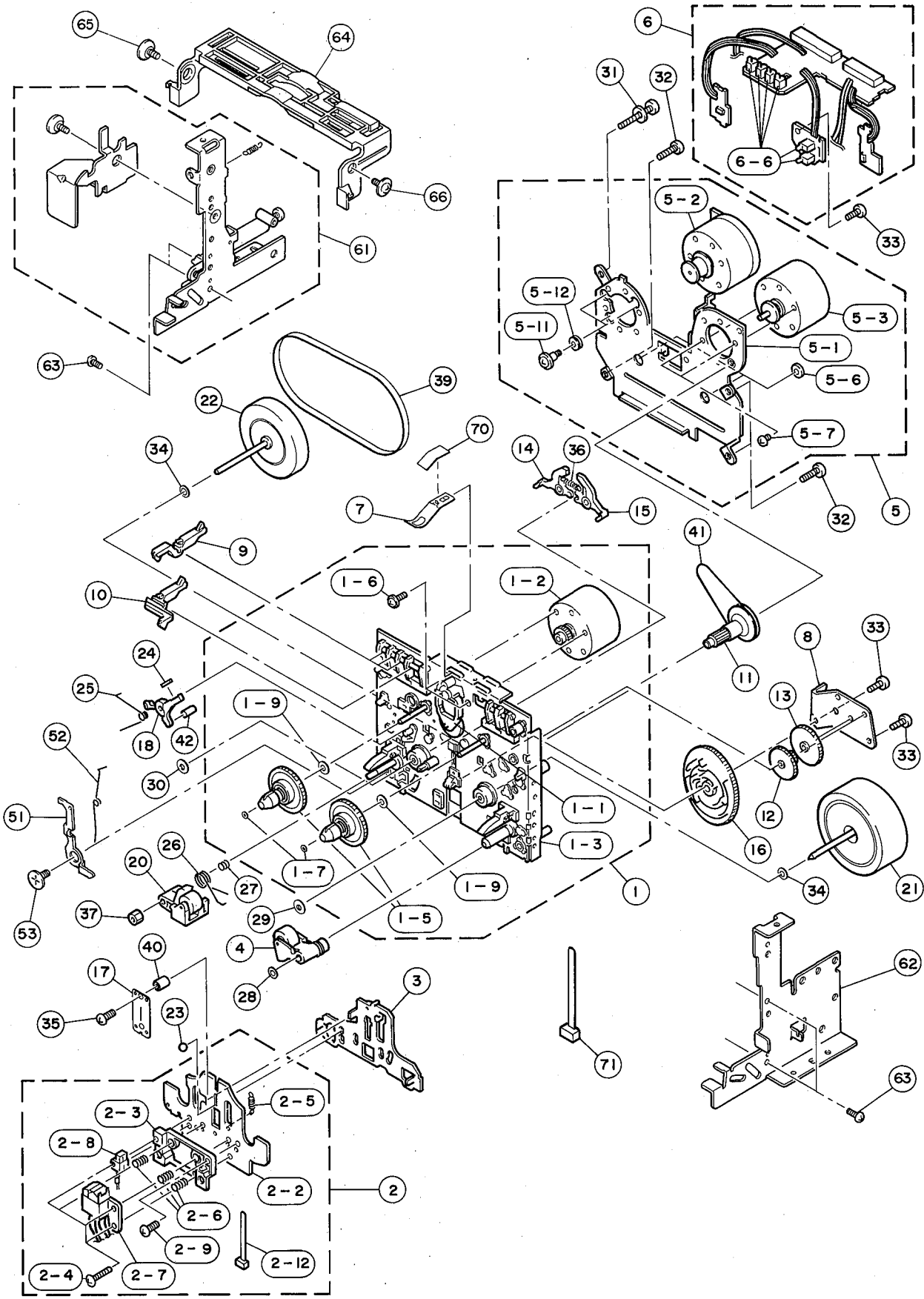
C

D

E

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EXPLODED VIEW



MECHANICAL PARTS

Note) Ø : Diameter

Ref. NO.	PART NO.	Description	Remarks	Markets
*	VM986200	CASSETTE MECHANISM		
*	1	NX611600 CHASSIS ASS'y		F511524
*	1-1	NX611640 IDLER ASS'y		F517053
*	1-2	NX611660 MOTOR ASS'y, REEL		F564302
*	1-3	NX611680 CHASSIS ASS'y, BASE		F612176
*	1-5	NX611690 REEL BASE ASS'y		F623076
*	1-6	AX617750 PAN HEAD SCREW	2.6x10 ZN	UG14C13
*	1-7	XX636610 WASHER	1.7x3.2x0.25	FJ11117
*	1-9	XX641850 WASHER	2.1x7x0.25	UJ12V11
*	2	NX611620 HEAD BASE ASS'y		F513679
*	2- 2	AX617560 HEAD BASE D		FC57D14
*	2- 3	AX617630 HEAD SPACER D		FD49L14
*	2- 4	AX617640 PAN HEAD SCREW	2x8	FG14026
*	2- 5	AX617680 SPRING, HEAD BASE		FK30W11
*	2- 6	AX617690 SPRING, AZIMUTH		FK30Y11
*	2- 7	JX601340 HEAD, REC/PB	GF-50 H-2381	FU20D21
*	2- 8	JX601330 HEAD, ERASE	H-3311	FU19W11
*	2- 9	EJ026056 PAN HEAD TAPPING SCREW	2.6x5 ZMC2-Y	KG19429
*	2-12	CX674330 BINDING TIE		FH12611
*	3	NX611610 PLATE BASE ASS'y		F512122
*	4	NX611630 PINCH ROLLER ASS'y		F514093
*	5	NX611650 MAIN MOTOR ASS'y		F525293
*	5- 1	AX617570 F/W BRACKET		FC57F14
*	5- 2	JX601360 MOTOR, CAPSTAN		FW16C11
*	5- 3	JX601350 MOTOR, ASSIST		FW15C11
*	5- 6	XX662650 SCREW, WHEEL		FM17722
*	5- 7	XX641930 PAN HEAD SEMS SCREW	2.6x3.5	UG11S14
*	5-11	XX670360 SCREW, MOTOR		UG12W12
*	5-12	XX662730 CUSHION, MOTOR		FJ11512
*	6	NX611670 P.C.B. ASS'y, CONTROL		F567461
*	6-6	KX601080 PUSH SWITCH		UE16E11
*	7	AX608300 SPRING, CASSETTE		FC52H13
*	8	AX617590 BRACKET, P.C.B.		FC57H11
*	9	AX611250 SENSOR LEVER	REC	FD44T14
*	10	CX612740 SENSOR LEVER	METAL TAPE	FD44V12
*	11	CX674280 GEAR A		FD48Y21
*	12	CX674290 GEAR B		FD49A11
*	13	CX674300 GEAR C		FD49B11
*	14	AX617600 BRAKE L		FD49C11
*	15	AX617610 BRAKE R		FD49D12
*	16	CX674270 CAM GEAR		FD48W12
*	17	AX617580 SPRING, THRUST		FC57G12
*	18	AX617620 ARM, BACK TENSION		FD49E14
*	20	NX611720 PINCH ROLLER ASS'y		FR23F11
*	21	NX611700 FLYWHEEL ASS'y, TAKE UP		FR23D21
*	22	NX611710 FLYWHEEL ASS'y, SUPPLY		FR23E11
*	23	AX617740 STEEL BALL	1/16	MM11311
*	24	CX674350 FELT		FZ11Y12
*	25	AX617700 SPRING, BACK TENSION		FK31A11
*	26	AX617660 SPRING, PINCH ROLLER (L)		FK26S14
*	27	AX617670 SPRING, ADJUST		FK26V11
*	28	CX674340 WASHER		FJ12322
*	29	BX602070 WASHER, OIL SEAL	2.4x0.25	FJ14111A

*New Parts (新規部品)

Ref. NO.	PART NO.	Description	Remarks	Markets
30	BX602080	WASHER, OIL SEAL	2.15x0.25	FJ14114A
* 31	AX617760	SPECIAL SCREW S-TITE	2.6x25 ZN	UG19G11
32	XX684890	SPECIAL SCREW	2.6x8	UG12H14
33	XX695350	SCREW	2x6	UG12H11
34	XX636810	WASHER	2.6x0.25	FJ11130
* 35	AX617770	PAN HEAD TAP-TITE SCREW	2x7 ZN	UG22B11
* 36	AX617650	SPRING, BRAKE		FK20R21
* 37	CX674360	NUT, NYLON		UG20L12
* 39	CX674310	MAIN BELT		FF16M31
* 40	AX617720	SPACER		FL42C11
* 41	CX674320	BELT		FF18R11
* 42	AX617730	ARM SHAFT, BACK TENSION		FL42N11
51	CX612060	PROTECT ARM (L), EJECT	L	FC39L70
* 52	AX617710	PROTECT SPRING (L), EJECT		FK31M11
53	AX613160	SPECIAL SCREW	7.7	UG15S11A
61	AX616700	PLATE HOLD ASS'y		F573246
62	BX602360	HOLDER R, MECHANISM		FC58H12
63	Ei026046	BIND HEAD TAPPING SCREW	2.6x4 ZMC2-Y	KG19428
64	CX672990	ARM, EJECT		FD50E13
65	AX613170	SPECIAL SCREW	4.7	UG14M31
66	XX684660	SPECIAL SCREW		UG14L11
70	CX673400	TAPE, ACETATE	20mm	EF15N00
71	CB069250	BINDING TIE		FH12613

*New Parts (新規部品)

Parts List for Carbon Resistors

Value	1/4W Type Part No.	1/6W Type Part No.	Value	1/4W Type Part No.	1/6W Type Part No.
1.0 Ω	HJ35 3100	HF85 3100	10 kΩ	HF45 7100	HF45 7100
1.8 Ω	HJ35 3180	*	11 kΩ	HF45 7110	HF45 7110
2.2 Ω	HJ35 3220	HF85 3220	12 kΩ	HJ35 7120	HF85 7120
3.3 Ω	HJ35 3330	HF85 3330	13 kΩ	HF45 7130	HF45 7130
4.7 Ω	HJ35 3470	HF85 3470	15 kΩ	HF45 7150	HF45 7150
5.6 Ω	HJ35 3560	HF85 3560	18 kΩ	HF45 7180	HF45 7180
10 Ω	HF45 4100	HF45 4100	22 kΩ	HF45 7220	HF45 7220
15 Ω	HJ35 4150	HF85 4150	24 kΩ	HF45 7240	HF45 7240
22 Ω	HF45 4220	HF45 4220	27 kΩ	HJ35 7270	HF85 7270
27 Ω	HJ35 4270	HF85 4270	30 kΩ	HF45 7300	HF45 7300
33 Ω	HF45 4330	HF45 4330	33 kΩ	HF45 7330	HF45 7330
39 Ω	HJ35 4470	HF85 4390	36 kΩ	HF45 7360	HF45 7360
47 Ω	HF45 4470	HF45 4470	39 kΩ	HF45 7390	HF45 7390
56 Ω	HF45 4560	HF45 4560	47 kΩ	HF45 7470	HF45 7470
68 Ω	HF45 4680	HF45 4680	51 kΩ	HF45 7510	HF45 7510
75 Ω	HF45 4750	HF45 4750	56 kΩ	HF45 7560	HF45 7560
82 Ω	HF45 4820	HF45 4820	62 kΩ	HF45 7620	HF45 7620
91 Ω	HF45 4910	HF45 4910	68 kΩ	HF45 7680	HF45 7680
100 Ω	HF45 5100	HF45 5100	82 kΩ	HF45 7820	HF45 7820
110 Ω	HJ35 5110	HF85 5110	91 kΩ	HF45 7910	HF45 7910
120 Ω	HF45 5120	HF45 5120	100 kΩ	HF45 8100	HF45 8100
150 Ω	HF45 5150	HF45 5150	110 kΩ	HF45 8110	HF45 8110
160 Ω	HJ35 5160	*	120 kΩ	HF45 8120	HF45 8120
180 Ω	HF45 5180	HF45 5180	150 kΩ	HF45 8150	HF45 8150
200 Ω	HF45 5200	HF45 5200	180 kΩ	HF45 8180	HF45 8180
220 Ω	HF45 5220	HF45 5220	220 kΩ	HJ35 8220	HF85 8220
270 Ω	HF45 5270	HF45 5270	270 kΩ	HF45 8270	HF45 8270
330 Ω	HF45 5330	HF45 5330	300 kΩ	HF45 8300	HF45 8300
390 Ω	HF45 5390	HF45 5390	330 kΩ	HF45 8330	HF45 8330
430 Ω	HF45 5430	HF45 5430	390 kΩ	HJ35 8390	HF85 8390
470 Ω	HF45 5470	HF45 5470	470 kΩ	HF45 8470	HF45 8470
510 Ω	HF45 5510	HF45 5510	560 kΩ	HJ35 8560	HF85 8560
560 Ω	HF45 5560	HF45 5560	680 kΩ	HJ35 8680	HF85 8680
680 Ω	HF45 5680	HF45 5680	820 kΩ	HJ35 8820	HF85 8820
820 Ω	HF45 5820	HF45 5820	1.0 MΩ	HF45 9100	HF45 9100
910 Ω	HF45 5910	HF45 5910	1.2 MΩ	HJ35 9120	*
1.0 kΩ	HF45 6100	HF45 6100	1.5 MΩ	HJ35 9150	HF85 9150
1.2 kΩ	HF45 6120	HF45 6120	1.8 MΩ	HJ35 9180	HF85 9180
1.5 kΩ	HF45 6150	HF45 6150	2.2 MΩ	HJ35 9220	HF85 9220
1.8 kΩ	HF45 6180	HF45 6180	3.3 MΩ	HJ35 9330	HF85 9330
2.0 kΩ	HJ35 6200	HF85 6200	3.9 MΩ	HJ35 9390	*
2.2 kΩ	HF45 6220	HF45 6220	4.7 MΩ	HJ35 9470	HF85 9470
2.4 kΩ	HJ35 6240	HF85 6240			
2.7 kΩ	HF45 6270	HF45 6270			
3.0 kΩ	HF45 6300	HF45 6300			
3.3 kΩ	HF45 6330	HF45 6330			
3.6 kΩ	HJ35 6360	HF85 6360			
3.9 kΩ	HF45 6390	HF45 6390			
4.7 kΩ	HF45 6470	HF45 6470			
5.1 kΩ	HF45 6510	HF45 6510			
5.6 kΩ	HF45 6560	HF45 6560			
6.8 kΩ	HF45 6680	HF45 6680			
8.2 kΩ	HF45 6820	HF45 6820			
9.1 kΩ	HF45 6910	HF45 6910			

1/4W Type

1/6W Type

KX-670

YAMAHA

KX-670
